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A Survey of Ancient Peruvian Art

BY

Phillip Ainsworth Means

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Philip Ainsworth Means

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of
Ancient Peruvian Art

BY

PHILIP AINSWORTH MEANS

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I. INTRODUCTION.

It will be the writer's endeavor to present in this paper a brief review of the various types of art to be found in pre-Columbian Peru. The work is the fruit of some four years' study, two years of that period having been devoted to a systematic collection of data in various places and under the direction of various people. As the main purpose will be to establish a basis for the classification of Peruvian art-objects, the study will be confined to those regions where the form and stratigraphic relations of the various art-types that make up the sequence of cultures have been determined with a reasonable degree of precision. The reader is urged carefully to bear in mind the fact that many of the various types are to be found in regions far removed from those here to be specified. But in those regions which are far from the source of an art-type or culture new environmental and psychological conditions almost inevitably exercise an influence which results in profound modifications of the original type. The writer hopes that this paper will help to link certain of the Peruvian arts or cultures with certain types of objects from such regions as Ecuador, Eastern Bolivia, North-western Argentina and Northern Chile. It may even be possible in time to gather material evidence which will conclusively prove the basic unity of all the more advanced types of art in aboriginal America.

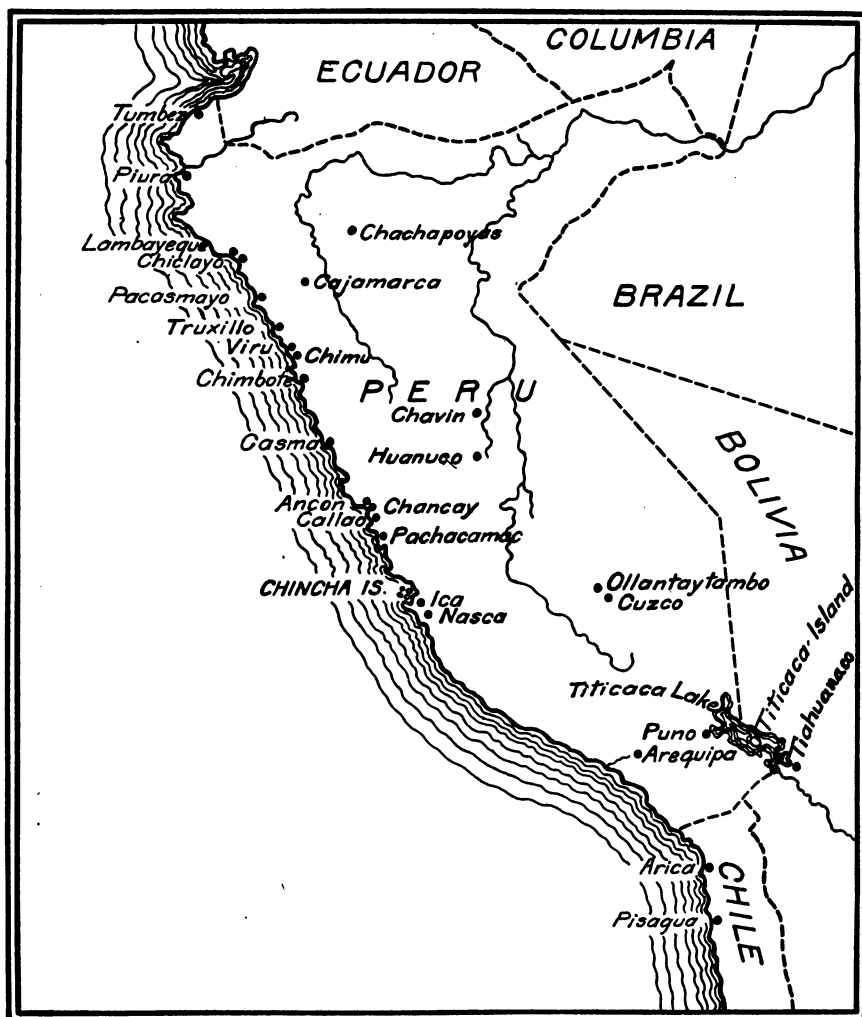
In the writer's opinion it is still too early to attempt, with any likelihood of success, to read or interpret the inner significance of the various designs that we shall study. Attempts of this nature have been made by Berthon, (1911), Joyce, (1913b), Posnansky, (1914), and others, but still it seems to be unavoidable under the present limitations of our information that all speculations of this sort should lack an atmosphere of conclusiveness. In this day, with our present incomplete knowledge of these ancient peoples, we should not attempt to read into their exotic designs a set of significances expressed in terms of our own experience. Rather, the investigator should seek painstakingly to analyze the various component parts of each pre-Columbian art or culture, as well in Brazil, Argentina, Chile, Ecuador, Colombia, Panama, and Middle America as in Peru

and Bolivia, with a view first to finding out the distribution of each and every element, and ultimately to arriving at some safe and permanently tenable opinion as to the cultural ancestry of each of the cultures that have flourished in the several regions.

The writer also believes that it is time for a serious attempt to be made to construct for the various cultures of pre-Columbian Peruvian art a chronology, supplied with approximate dates, similar to the one already established for the Maya area. In order to arrive at any permanently valuable opinion as to the cultural position and cultural ancestry of these Peruvian art-types, it will be necessary first to know, at least approximately, when and how long they flourished. For many years it has been the fashion for South American archaeologists to look askance at all efforts to construct a chronology. The recent researches of Dr. Uhle, of the late Sir Clements Markham, of Sr. Arturo Posnansky, of the late Dr. Gonzalez de la Rosa and of others have, however, afforded material that seems to justify a formal undertaking of the construction of a date-chronology for the various Peruvian cultures. The author has already made a tentative effort in this direction,¹ and the reception it has met with has encouraged him to pursue the matter further. It is inevitable that discussion of this important matter should finally result in the establishment of a reasonably correct date-chronology. Accordingly, in the hope of bringing that desideratum of Peruvian archaeology nearer, he has ventured to insert at the end of this study a tentative date-chronology of the various art-periods or cultures of early Peru.

The author is greatly indebted to many people for the aid, of various sorts, that they have given him during the preparation of this paper. Chief among these are the following: Dr. Roland B. Dixon, of Harvard University; Dr. Alfred M. Tozzer, of Harvard University; Dr. George F. Eaton, of Yale University; Professor George Grant MacCurdy, of Yale University; Dr. Herbert J. Spinden, of the American Museum of Natural History; Mr. Charles W. Mead, of the American Museum of Natural History; Professor Marshall H. Saville, of the Museum of the American Indian; Mr. Sylvanus Griswold Morley, of the Carnegie Institution; Dr. Aleš Hrdlička, of the United States

¹ Means, 1917.



SKETCH MAP OF PERU

Showing the locations of the chief sites mentioned in the body of the paper.

National Museum; Mr. F. W. Hodge, of the Smithsonian Institution; and, Mr. Thomas A. Joyce, of the British Museum. To all these gentlemen the writer wishes to extend his thanks for their help.

Acknowledgments are also due to the authorities of the Peabody Museum, Cambridge, Mass., to those of the Museum of Fine Arts, Boston, and to those of the American Museum of Natural History for permission to figure various objects in their collections. Mr. Guernsey of the Peabody Museum, Cambridge, was so kind as to help the writer in taking some of the pictures that accompany the paper, and Dr. Denman Waldo Ross was so good as to spend a long time discussing the aesthetic side of the designs on several of the textiles here illustrated.

II. THE CULTURE PERIODS OF PERUVIAN ART.

Before proceeding to a detailed analysis or to any endeavor to coördinate the various cultures, it will be best for us to state as briefly as possible what the periods of culture are and where each is found at its highest development. Appendix II shows their chronological position with respect to one another, and the accompanying map shows the location of the chief sites connected with each of the cultures. It remains for us to summarize the outstanding features of the various types.

I. THE PROTO-CHIMU AND PROTO-NASCA CULTURES.

One may conveniently distinguish between the two subdivisions of this earliest coast culture-period by remembering that the Proto-Chimu flourished all along the northern half of the Peruvian littoral and the Proto-Nasca along the southern half.¹ This subdivision is arbitrary, being based on the form of arts prevailing in the two regions. It is not a wholly satisfactory classification, and it may ultimately have to be modified. For example, it may sometime become desirable to delimit at Pachacamac a style which should be called "Proto-Pachacamac." Our information is, however, too scanty to justify such a course as yet, and it is better for the present to rely upon the classification here offered, which does preserve and emphasize the main lines of differentiation between the major varieties of the earliest coast art.

The art of the region around Chan Chan and Moche² in the modern department of Libertad is characterized by features that

¹ The terms "Proto-Chimu" and "Proto-Nasca" were adopted by Dr. Uhle after he discovered that the objects belonging to them did not belong to the Chimu and Nasca cultures. The name by which the early but highly gifted people called themselves is unknown.

² Here again, the nomenclature must be commented upon. The two places just named are near Trujillo and they are the chief sites for Proto-Chimu ware. The name Chimu is used for the same sites at a later period, when the Chimu culture was flourishing. Chimu is derived from the Mochica place-name Chimorr or Chamorr; Moche is the Hispanicised form for Muchik; Chiclayo was formerly Chajaep; Lambayeque is derived from Nampajek. Cf. Middendorf, 1892, p. 64.

set it in sharp contrast to other Peruvian art-types. As a rule, the other Peruvian cultures are marked by conventionalization. The Proto-Chimu, on the contrary, is comparatively free from conventionalization and is marked by strong realism, especially in the animal forms, "portraits" and "landscapes." In close association with the elaborate modelling in the round went painted decorations of a type always easy to identify. These paintings were usually in dark reddish brown on a cream-colored slip. In a few cases such colors as light red, orange and buff were used in the vase-paintings. The outlines of the figures are marked by a grace that is unusual in Peruvian art, and in the grouping of the various scenes a striking command of the principles of composition and grouping is displayed. Some of the vase-paintings of this period partake of the nature of genre paintings, and they help us in no slight degree to reconstruct the material culture and customs of the people whom they depict.

It is but right to say here a word or two regarding the reasons that have led Uhle, Joyce and several others to believe that the Proto-Chimu and the Proto-Nasca are the earliest Peruvian arts. The architecture associated with remains of this culture takes the form of massive walls built up of large balls of clay placed in position while still wet and allowed to dry in such a manner that they partly ran together, thereby forming a solid mass of material. Stratigraphic evidence proves that this architecture, of which only a little is left, is the oldest.³

Reserving further comments on Proto-Chimu art for a later page, we will now run over the outstanding features of Proto-Nasca art, always bearing in mind the fact that it was probably not only contemporaneous with Proto-Chimu but also closely associated with it on ethnic grounds.

Undoubtedly Proto-Nasca will, in time, serve more truly to explain certain problems than will Proto-Chimu. At the same time, regarded merely as an art, it is not so remarkable. It is more like other Peruvian arts, for reasons that will later appear. Unlike the Proto-Chimu, Proto-Nasca is not characterized by graceful modelling and graceful painting. Rather, it sacrifices both the form of the vessels and the lines of the paintings to a remarkable wealth of coloration. To the novice, it is true, the

³ Joyce, 1912, p. 179; Uhle, 1913, pp. 102-103; Means, 1917.

Proto-Nasca vessels appear sombre enough, but the more one studies them the more he becomes impressed with the wonderful richness and variety of their tints. The mere fact that most of them are from the dark side of the color-scale does not impair the effect of subdued richness. If, then, we never find in Proto-Nasca the astonishingly good modelling that excites wonder, and sometimes amusement, at the Proto-Chimu art, the lack is in part made up for by the presence of sumptuous color combinations that may well give valuable hints to modern artists.

It is the opinion of Mr. Joyce that no textiles of this period have survived to the present time.⁴ But for reasons to be enlarged upon later, the present writer ventures to hold the contrary opinion on this point.

Though profoundly different, as has been shown, the Proto-Chimu and Proto-Nasca arts have similarities to one another that are quite as significant as their divergences. The similarities are to be found in the subject-matter of the two arts rather than in the details of their execution. In both, the use of headdresses decorated with animal-faces is apparent; in both, the use of various sorts of masks and of eye-painting is noticeable; and in both the centipede-like tail ending in a human face is often found. An important article by Mr. Joyce affords the material for forming these opinions.⁵

2. THE CULTURE KNOWN AS TIAHUANACO I.

The researches of Posnansky, Uhle, Gonzalez de la Rosa and others have established the fact that the remains at and around Tiahuanaco⁶ in Bolivia represent two sharply differentiated cultures. Of these, the cruder was the earlier. Posnansky, to whom the subdividing is chiefly to be credited, calls this first and simpler epoch "*Tiahuanaco Primitivo*." The writer, in

⁴ Joyce, 1912, p. 200.

⁵ Joyce, 1913b.

⁶ Though we shall fall in with modern usage and employ the name Tiahuanaco, it is to be noted that the early name for the place appears to have been Taypicala. This, according to Cobo (IV, p. 65) and Baudelier (1911, pp. 222 and 243), has the meaning of "Stone-in-the-Center (of the Universe)." The word appears to be derived from the "Aymara" (correctly, Colla) terms *taipiri*, center, and *ccala*, worked stone. (Cf. Vocabulario poliglota incaico, 1905.)

seeking for a good English equivalent for this term, decided to adopt one that was suggested by Aegean archaeology—hence “Tiahuanaco I,” and also “Tiahuanaco II.”

The architecture of Tiahuanaco I was true megalithic masonry. In building a wall, the early Tiahuanaco people adopted the simple but effective method of setting up at intervals large vertical oblong monoliths. In the edges of these nearest to the next pillar grooves were often cut from the base to the top and into them the builders fitted other blocks of stone by means of which a wall of comparatively small stones was made between the large ones.

In all probability Tiahuanaco I was contemporary, at least in part, with Proto-Chimu and Proto-Nasca. Nevertheless, as will be developed later, there is no trace of the early coast types to be found associated with Tiahuanaco I deposits. It is, in the writer's opinion, impossible to say with accuracy whether or not any pottery or textiles have survived from the Tiahuanaco I period. Posnansky, however, figures two rude stone heads used, apparently, as wall-ornaments, dating from this period.⁷

Even a brief study of Tiahuanaco I reveals the fact that it is totally unlike either of the probably contemporaneous coast-cultures. What, then, is it like? Is it an indigenous and autochthonous culture? The whole trend of modern investigation into the ancient cultures of America discourages belief in the autochthonous nature of the Tiahuanaco I culture. It must, therefore, have been derived from some other region. As it obviously is not connected, even remotely, with any of the other cultures in South America that can possibly have been contemporary with it, save for one possible exception, we must study, however briefly, the strands of evidence that bind it to the group of cultures which constitute that exception. It is, then, suggested that the erectors of the Tiahuanaco I culture were related to, or even members of, the great Arawakan stock of Brazil. This is as yet but a theory. Facts, however, lend it a certain color of truth. These facts we will briefly outline.

Far to the south-east of Lake Titicaca, in the Bolivian province of Santa Cruz, is a site called Samaipata which yields cut rocks very suggestive of the stone-work of Tiahuanaco I. We owe

⁷ Posnansky, 1911, p. 33.

our knowledge of this place to Baron Nordenskjold, and it is his opinion that the remains at Samaipata are associated with Arawakan builders.⁸ Archaeology, then, offers a slender thread with which to bind the Tiahuanaco I culture with the Arawakan stock at Samaipata. But this is not all the evidence afforded by archaeology. The island of Marajo, at the mouth of the Amazon, yields evidences of occupation by a people who had a stone technique of a grade similar to that of the Tiahuanaco I people. Finally the characteristic feature of the better sort of Tiahuanaco I stone-carvings is the continuity of the eyebrows and nose so as to form a T-shaped figure.⁹ This feature is also found in some of the pottery heads from Marajo in the Peabody Museum, Cambridge, and likewise it is observable on the secondary decorations of the Weeping God figure at Tiahuanaco. (See Plate VII.)

Furthermore, linguistics and a study of migrations seem to throw some light on the situation. Haddon indicates roughly that there was a shift of peoples from north-eastern South America toward the Titicaca and Samaipata regions. Chamberlain and others indicate that members of the Arawakan linguistic stock are to be found far over toward the Andes at the latitude of Lake Titicaca.¹⁰

On the whole, then, there is a certain justification for suggesting that the first high-cultured dwellers at Tiahuanaco were derived from stock belonging to the eastern half of the continent. The reader is reminded, however, that this whole point is in an embryonic state of discussion. Only long and systematic work will definitely establish the Arawakan derivation of the Tiahuanaco I people and their culture.

3. THE CULTURE CALLED TIAHUANACO II.

If Tiahuanaco I was probably contemporary with the Proto-Chimu and Proto-Nasca cultures of the coast, Tiahuanaco II is no less probably derived, at least in part, from the latter of those two coast cultures. This will be enlarged upon later on.

⁸ Nordenskjold, 1902, 1906, 1906b.

⁹ See Posnansky, 1914, Plate XXXX.

¹⁰ Haddon, 1912; Chamberlain, 1913b, p. 474 ff.

There can be but little doubt that the culture which we call Tiahuanaco II was the most highly developed in South America. It even rivals the Maya culture of the "Old Empire" cities in the southern part of Yucatan.

It may be true that it is dangerous to measure the actual spread of a culture by the boundaries of the territory within which remains of its distinctive products are to be found. *Political* affinities, of course, cannot be determined by any such evidence; but, nevertheless, the fact that Tiahuanaco II objects are found from Colombia to Argentina is a proof that the *cultural* dominance of Tiahuanaco II was exceedingly widespread.

As we have seen, there was a shift, in the transition from Proto-Chimu to Proto-Nasca, from a light-toned art enriched by good modelling to a dark-toned art characterized by poor and slight modelling. For reasons to be brought out later it is but natural that we should find the characteristics of Proto-Nasca art carried on to their logical development in the art of Tiahuanaco II. This natural state of affairs is found to exist.

In Plate VII we see an important portion of the largest monolithic gateway at Tiahuanaco. It may safely be said to be an epitome of Tiahuanaco II art. Its characteristics, from our point of view, may be listed thus: (1) A headdress decorated with ray-like tabs. (2) Square-headed chief figure with round eyes from which run down the "tears." (3) A short stout body with a necklace and a short, skirt-like garment held up by bands that run over the shoulders. (4) Four-digit hands holding ceremonial staves. All these elements will, of course, be analyzed in full later on.

In general terms, one may say that Tiahuanaco II art, whether in stone, pottery, textiles or bronze, is the most elaborate we have yet seen. Birds with human bodies, pumas, fishes and other animal forms combine with almost innumerable conventionalized decorations to form an art of surpassing complexity. In the pottery of this period we find a sacrifice of coloration to a perfection of the almost glaze-like finish. In other cases, however, Tiahuanaco II pottery has neither rich coloration nor fine finish. Red and black are the chief colors employed, though sometimes white is found as well. The textiles, however, naturally preserve a wider range of tint. Unfortunately, most of those that have survived into our day come from the coast and so do not repre-

sent Tiahuanaco art as having the austere elaborateness that marks it in the highlands. Indeed, this characteristic of the textiles of Tiahuanaco II on the coast may have been found also on the pottery from that region and period. It may well have been a heritage from the rich-tinted Proto-Nasca period.

In many ways the civilization of the Tiahuanaco II "Empire" was the highest that ever flourished in pre-Columbian America. As has been said, it may not have been wholly a political "empire," but it is probable that all through the wide area where Tiahuanaco II objects are found there was a constant interchange of ideas and merchandise. This opinion is borne out by the fact that all the chief edifices at Tiahuanaco itself were of massive stone. On the coast, however, where the earlier people (Proto-Chimu and Proto-Nasca) had used adobe and where stone was not easily obtainable, the Tiahuanaco II people adapted the old clay-ball architecture of their predecessors to their needs by modifying the clay balls into real bricks of sun-dried clay. These bricks, or adobes, ranged in size from seven or eight inches in length to three feet or more. Different sized adobes were used for different needs, just as different sized stones were used in the similar circumstances.

4. THE RED-WHITE-BLACK AND EPIGONAL CULTURES.

In general, it may be said that the red-white-black ware followed the Tiahuanaco II period of the north part of the coast, and that "epigonal" ware was distinctive of the southern part of the coast. Both were the successors of Tiahuanaco II, and both, especially the "epigonal," were influenced by it and by the earliest cultures. In this period the architecture remained much the same as in the preceding one, and the only radical difference that exists between Proto-Chimu and red-white-black on the one hand and Proto-Nasca or Tiahuanaco II and "epigonal" on the other is that neither of the later types were as technically admirable as the earlier ones.

Leaving for a later page the discussion of the details of this art-period, we will mention the only hint we possess of who the makers of the red-white-black ware were. It seems that the dynasty of Chimu was preceded in a portion of the north part of the coast by another dynasty called Naymlap whose chief seat

was Lambayeque.¹¹ The Naymlap people came from the north by sea, and they built up a state that was apparently conquered by the chief Chimu. All this, however, is as yet mere unsubstantiated theory.

5. THE CHIMU AND NASCA CULTURES.

With this period one begins to get some hint of the political, social and ethnological conditions under which the people lived. Several authors, ancient as well as modern, give valuable information on this head.¹²

All that, interesting though it is, lies without the scope of the present paper. We will therefore content ourselves with observing that in the period which we are now considering the northern portion of the coast, from Tumbes down to Casma, was under the sway of a great chief known to the Incas as Chimu Capac (Great Chimu). The valleys of Rimac, Pachacamac and Chancay were ruled by another great chief called Cuismancu. Runahuanac, Huarco, Mala and Chilca were ruled by Chuquimancu. Ica and Pisco (and perhaps Nasca) were ruled by the powerful chief Chinchu.

The different valleys being so divided from one another in political ways, it is not surprising that we find considerable local differences in art-types as well. Yet we have no grounds for assuming that the coast peoples were not rather closely related on ethnic lines, which explains, no doubt, certain widespread resemblances between the arts of the various regions.¹³

The architecture of this period, perhaps because of the influence of Tiahuanaco II, was very elaborate. Adobe continued to be the chief material, but it was used in more complex ways. Palaces, workshops, reservoirs, aqueducts and many other elaborate works were constructed. The custom of using stucco reliefs on walls became fairly common.¹⁴

¹¹ See Markham, 1912, p. 222; Joyce, 1912, pp. 50 ff.; Beuchat, 1912, pp. 584 ff.; Means, 1917; Garcia Rosell, 1903.

¹² See Cieza, 1864, pp. 233 ff., 1883, pp. 185-193; Garcilasso, II, pp. 181-201; Cobo, 1892, IV, pp. 47-54; Markham, 1912, pp. 200-239; Joyce, 1912, pp. 95 ff.; Garcia Rosell, 1903; Arriaga, 1621.

¹³ Hrdlička, 1914, pp. 41 ff., and pp. 52 ff.

¹⁴ Middendorf, 1894-95, II, p. 375; Squier, 1877, pp. 136 ff., 150 ff.; Joyce, 1912, pp. 150 ff.

The artifacts of the period under consideration are chiefly in the form of pottery, albeit textiles are also present to a considerable extent. In general, designs on Nasca textiles may be said to take the form of rather simple, but by no means crude, geometric patterns, perhaps with a slight and conventionalized zoomorphic element, such as those in Uhle, 1913b, Figures 3, 7, and 9. On both pottery and textiles of this region and period the colors were much less numerous and splendid than they were in either the Proto-Nasca period or the Tiahuanaco II period. If, then, Nasca art can be said to preserve an echo of the color traditions of its predecessors, and also of their geometric tendencies, (for some of its chief motifs are derived directly from some of their minor ornamental details), so, in no less degree, can the black modelled ware of the Chimú period be said to preserve the realistic tendencies, as well as some of the decorative motifs, of Proto-Chimú art.

6. THE COLLA-CHULPA CULTURE.

The name chosen to distinguish this period is made up of the two names applied by various writers to the people who lived in it.¹⁵

As the general culture-level was so low, it is but natural that the pottery of this period should be poor. The best collection of it is that made by Bandelier which is now to be seen in the Ameri-

¹⁵ Joyce, 1912, p. 75, Markham, 1912, p. 186, Beuchat, 1912, p. 576, and others use the term *Collas*. Bandelier, 1910, pp. 184 ff., calls them *Chullpa*. (The double ll is without justification.) The term *Aymará*, often applied to these people by writers, and even by such first-rank authorities as Bandelier (1910, pp. 63 *et passim*), Hrdlička (1911, p. 1) and others, is entirely misleading. The people who lived in the Titicaca basin between the time of Tiahuanaco II and the Inca conquests were the Collas. It was they who produced the culture here to be discussed and who built the chulpas or burial-towers. The name Aymará was first given to these people by the Jesuits of Juliaca some time before 1590, and it was established in usage by Bertonio (1603) and Torres Rubio (1616). All this has been emphasized by Markham (1912, p. 192) and Joyce (1912, p. 75) but it cannot be dwelt upon too often. The mistake of the Jesuits is accounted for by the fact that the Aymarás, whose original home was between Cuzco and the continental divide, were conquered by the Inca Pachacutec and were moved, by him, to Lake Titicaca as *mitimaes*. (Sarmiento, 1907, p. 108; Garcilasso, II, p. 50.)

can Museum of Natural History, New York City. It has not seemed to the writer to be worth while to include pictures of this type, so a description will be given in order that some idea of the type may be formed.

In the Bandelier collection are a number of jars from Sillustani, a place that was probably the site of important activities during the Colla-Chulpa period.¹⁶ The vessels are made in two styles. One is a small type of vessel of white clay, rather coarse and undecorated; the other type is made up of red ware, also coarse, with designs in black upon it. Other specimens, doubtless from this period, are a class of rather coarse and clumsy bowls with design suggestive of the "epigonal" of the coast. (See Bandelier, 1910, Plate XXI.) Coarse bottles of dark red clay, sometimes decorated with black lines, and gray bottles with incised rectilinear spirals seem to exhaust the artistic repertory of the Colla-Chulpa potter. In bronze work, however, the Colla-Chulpa folk were much more advanced, as is evidenced by the archaeology of the region where the chulpas abound.¹⁷

It would be a mistake to close our study of this intermediate period without a brief study of the unusual architectural form that peculiarly marks it. The *chulpas* are strictly speaking stone towers, either circular or rectangular in plan. They vary greatly in size and neither their use nor their distribution is yet definitely settled. Even with our present limited information, however, it is possible to distinguish several types of chulpa. Sir Clements Markham long ago suggested that the cruder types might have been adopted later by the Incas who evolved from them the less crude types.¹⁸ Without formally accepting this theory, we will discuss each of the types in the order of their *apparent* antiquity, bearing in mind the possibility that appearances *may* be deceptive. The most primitive form of chulpa, then, is that which is found at Quellenata and Ullulloma.¹⁹ The former of these places is close to the north-western end of Lake Titicaca; the latter is about fifty miles north-west of there. Primitive chulpas also occur at

¹⁶ Bandelier, 1910, pp. 184 ff.; Bandelier, 1905; Squier, 1877, pp. 376-384; Markham, 1912, pp. 186 ff.

¹⁷ Beuchat, 1912, pp. 580 ff.; Nordenskjöld, 1906, 1906b.

¹⁸ Markham, 1871, p. 308.

¹⁹ Squier, 1877, pp. 386 ff.

Sillustani, on the west of the northern end of Lake Titicaca, at Kalaki on the eastern shore, and at Coni and Curahuara far to the south-east of the Lake.²⁰ It will be seen that this type of chulpa was built over a wide area. Speaking in general terms, it is a round stone tower which is smaller at the bottom than at the top. The stones are uncut, and had some binding material. In some cases the roof is flat; in others it is a truncated cone. Stone was the sole material. The edifices of this type belong to the fourth period of Posnansky's culture-sequence. He calls it the "epoch of edifices of adobe and pirca (uncut stone)."²¹ This reckoning would place the style just prior to Inca times. The second type was, in outline, the same as the first. It tended, however, to be larger, and the stone was carefully cut so as to make a beautifully built wall. Sillustani, Coni and Kalaki are the chief sites for this type. The third and final type was somewhat the same as type two in regard to the material, but it differed from the other two in being rectangular in plan and very large, sometimes as much as thirty feet in height.²² Unlike the other two types, which had but one interior chamber, this third type sometimes had two chambers, one above the other. It is to be noted that this type is the only one which occurs outside the Titicaca drainage. There is an interesting example of it at Palca, not far from Tacna in northern Chile.²³

The question of who the Collas really were is a complex and

²⁰ Bandelier, 1910, pp. 243 ff., 1910, p. 186; von Tschudi, 1868, V, pp. 202 ff.

²¹ Posnansky, 1911b, p. 17.

²² Squier, 1877, pp. 352 ff., 372 ff.

²³ Squier, 1877, pp. 242 ff.

The whole question of the distribution of the chulpa-type of building is a highly important one, in all probability. The type has prototypes over a very large area. The writer has found it in the region of Ollantaytambo. It exists in the neighborhood of Oroya (see Dr. William C. Farrabee's photographs in the Peabody Museum) and something strikingly like it is found at Cuelap and other sites in the region of Chachapoyas. (Bandelier, 1907.) Again, in the district of Huarochirí, buildings of the chulpa type are found in the middle portion of Peru and fairly near the coast. (Hrdlička, 1914, Plates 3 and 4.) At present the evidence is rather tantalizing than illuminating. One can only say that over this wide area there seems to have been a material culture of the same general level as that of the Colla in immediately pre-Inca times.

important one. In considering it one must not forget the presence in the Titicaca basin of another and much lower-cultured stock called Urus or Uros. The general trend of the evidence at hand regarding the Urus shows them to be very low-cultured and quite widely distributed. In fact, their area at the time we are considering extended from Titicaca down to Lake Poopo or Aullagas. It may have extended westward to the Chilean coast. The stock was probably an old one. Boman (1908, I, p. 72) suggests that the Urus were vestiges of the earliest pre-Yunca (i. e. pre-Proto-Chimu) population, and that they were driven south and east by the earliest high-cultured invaders. At the same time, we must remember that, in the same general area, the higher-cultured Collas had a culture which was similar to that found in the north-western parts of Argentina. It might be suggested that one of these racial elements represents the inhabitants of the Tiahuanaco II "empire" and that the other represents the invading race which may have helped to bring it to a close. But which is which, and if this is the truth, we cannot surely tell.²⁴ To some it may seem more satisfactory to assume that there were two strata of population—Collas and Uros—who were mutually aloof. Such a state of affairs has been known to exist in Asia, Oceania and elsewhere. Certainly the Titicaca basin is spacious enough to permit isolated groups of Uros to dwell wholly apart from the surrounding Colla communities.

7. EARLY INCA CULTURE.

As has been said before, the culture of the mountain regions away from the sea suffered a general and marked subsidence after the Tiahuanaco II period, a subsidence which we have studied under the name of Colla-Chulpa culture. Therefore, when that gens of the valley of Cuzco which later became the Inca dynasty began to raise its own culture-level and that of the surrounding tribes it had not much artistic tradition on which to establish its own art.²⁵

²⁴ Cf. Chamberlain, 1910, 1910b, 1911, 1913; Boman, 1908; Garcilasso, II, pp. 223-227.

²⁵ It seems to the writer that the character of the Inca gens has never been properly appreciated, save, in a measure, by the late Sir Clements Markham. According to Sarmiento (1907, pp. 37 ff.), the people in imme-

Difficult though it sometimes is to distinguish between early and late Inca pottery forms, it is, in the writer's opinion, possible to establish a series of vessels from Machu Picchu²⁸ that will serve to throw some light upon the development of the most typical form of Inca (or Cuzco) pottery—the aryballus. But the reader should take care to bear in mind that the simpler and cruder forms, forms probably longer in use than the more advanced types, undoubtedly continued to be employed by the very late generations of the Incas' subjects as cooking utensils, etc., while the finer products of the potter were reserved for less heavy work. In spite of this, however, the fact remains that the cruder types, being very like the Colla-Chulpa pottery both in form and in material, were probably older types of vessels than the decorated and graceful forms. The reader is urged, then,

diately pre-Inca times lived without governmental organization of any sort except that in times of danger a military officer with the title of *Sinchi* was chosen. Besides this, in the opinion of Sir Clements Markham (1912, pp. 159 ff.), there was a social organization based upon the family at the head of which stood the *puric*. Several *purics* combined together into an *ayllu* or lineage. This system was carefully studied by Sir Clements Markham, and we have to thank him for showing us what the social conditions in the highlands before the rise of the Inca *ayllu* were. He did not, however, lay stress upon the historical significance of all this. Sarmiento (1907, pp. 40 ff.) tells us that just before the rise of the Incas, there were, in the valley of Cuzco, six *ayllus* in the possession of the region. Three of these, whose names he did not know, were native; three others, the Alcabisa, the Copalimayta, and the Culunchima, came and settled amicably among them. Later on, the Inca also came from not far off and settled at Cuzco. Strife arose between them and the other families which was not finally subdued for some time. Like the heads of all the other *ayllus*, the chief of the Incas bore the title *sinchi*. Hence we get the name Sinchi Rocca, borne by the first historic Inca.

²⁸ The name "Machu Picchu" is the one given to this site by Dr. Hiram Bingham, who visited it for the first time in 1911. Although the name is not a wholly satisfactory one, it has been thought best to continue its use here because the site has already become well known under it, and because the name Vilcabamba-the-Old (or Vilcabamba viejo) is rather clumsy, a fault which outweighs its greater historical accuracy. In any case, "Machu Picchu" is preferable to the "Matcho Picho," "Macho Piccho" and so on of such writers as Sartiges, 1851, and Wiener, 1880. The phrase *machu pichu* means "old ridge." The late Sir Clements Markham was of the opinion that the *cc* in the name "Machu Picchu" was a mistake. The name is pronounced Pí-chu, not Pic-chu.

to turn his attention to Dr. George F. Eaton's work on the osteological material from Machu Picchu, and to Dr. Hiram Bingham's "Types of Machu Picchu Pottery."²⁷ In the first place, we are justified in assuming that the delicately formed, well decorated aryballus of the type shown in our Plate XIII was one of the ultimate forms of Cuzco pottery by the fact that it is this type of vessel that is found most widespread, even in regions like Ecuador, Chile and Argentina where Inca influence did not arrive until very late. It will be our task therefore to show in a series the forms that led up to the final aryballus type. This we will now do. The series proposed by the writer is made up as follows:

FIRST STEP.

Rough, undecorated ware. Eaton, Plate XIV, Figure 4. Bingham, Fig. 48, No. 7a. Also see Eaton, Plate IX, Figs. 3 and 4 for a variation of the First Step.

SECOND STEP.

Slightly finer ware, sometimes decorated in colors, with enlarged handles and more pronounced neck. Eaton, Plate XIII, Figs. 1 and 2. Bingham, Fig. 47, No. 6a.

THIRD STEP.

Still coarse ware with more pronounced neck. Sometimes decorated(?). Handles small and moved down from the lip. Eaton, Plate XIV, Fig. 5. Bingham, Fig. 48, No. 8a.

FOURTH STEP.

The well-known type of Cuzco Aryballus. Our Plate XIII. Eaton, Plates V, VII, & X. Bamps, 1879. Oyarzún, 1910. Joyce, 1912, Plate XXII, and p. 229.

It will, perhaps, be well to say again that the particular crude specimens above referred to are not, in all likelihood, themselves older than the more refined specimens. For example, in the same grave with the specimen representative of the first step, Dr. Eaton found skeletal remains of the coast type, which implies that the pot belonged to people who had come up from the coast at some time subsequent to the Inca conquest of the littoral.²⁸ The point of the series presented, however, does not dwell in the antiquity of the *specimens*, but rather in the relative antiquity of the *types of form*.

To sum up, then, our impressions of the early Inca culture we will say that the time in which the Inca *ayllu* was extending its ascendancy over the other Quichua tribes in the neighborhood of Cuzco, the people of the Cuzco region were gradually evol-

²⁷ Eaton, 1916, Plates V-XIV; Bingham, 1915b, entire.

²⁸ Eaton, 1916, p. 45 ff.

ing from the simple pottery-types of their ancestors a new kind of pottery which was to find its fullest florescence under the last five Inca rulers. Because of the lack of detailed knowledge of the early Inca period, we shall not touch upon that culture again in this paper.

8. THE INCA CULTURE AT ITS HEIGHT.

As the Inca culture is the nearest to us historically it is but natural that we should know more about it than we do of the rest. It is even possible to draw up a fairly complete and reliable history of the Inca dynasty, especially of the last six rulers. For a long time it was customary to assign all evidences of pre-Columbian culture in Peru to the Incas; indeed, that is still done, unfortunately, by some writers. They disregard the growing evidence which points more and more clearly to the inferiority in many respects of the Incas to their various predecessors.

The Incas were, nevertheless, wonderful people. They had a real genius for government and their state was the only truly socialistic monarchy that has ever existed. The individual was nothing; the state, that is the Inca himself and his blood-relatives, was supreme in all things. It is not surprising that, in a state like this, strongly centralized, autocratic, theocratic and all-controlling, the art of outlying regions should all tend to approximate that of the capital of the dominion ruled by the Inca from Cuzco. This is, in the writer's opinion, the psychological explanation of the fact that from Quito to Chile and from the Pacific to the Brazilian wilderness, vessels, architecture, weapons, textiles and language all conform, with varying degrees of closeness, to the fashion or example set by the people of Cuzco. Typical Cuzco pottery is found wherever the Inca conquerors penetrated; Quichua dialects prevail to-day over the same areas.

As far as *shape* is concerned, the vessels made by the subjects of the Incas of the later generations are the most graceful in Peru. The aryballus, the beaker, the bowl and many other forms, all very attractive, are found. Dr. Hiram Bingham, whose trips to Peru have resulted in the publication of many valuable pictures of Inca sites and products, has given a résumé of the commoner Inca forms.²⁹ Machu Picchu, the site from which

²⁹ Bingham, 1915b.

most of these objects come, was thought by Dr. Bingham to be Tampu Tocco, the "cradle" of the Incas. He also presented convincing evidence pointing to the fact that the city was Vilcabamba-the-Old, a celebrated sacerdotal establishment of the Incas in post-conquest times.³⁰ It should be noted that the work of Dr. Eaton has left very little doubt as to the modernity of this site as compared with that of Tiahuanaco or Chimu. Every class of object found there, every bit of osteological evidence, points to the fact that Machu Picchu was built at some time after the Incas had conquered the coast of Peru and had had time enough to be affected by the influence of coast art.³¹ We are indebted, therefore, to the Yale Expedition for the unveiling of a city which, though known to travelers for many years, has never, until recently, been photographed and adequately described. Machu Picchu is undoubtedly the most valuable site in the Cuzco region, for it presents an epitome of all that the Incas knew of art, architecture and engineering at a time when they were at the zenith of their power. We shall, therefore, consider Machu Picchu pottery to be representative of all that the pottery of late Inca Peru was, and we shall study it accordingly, assuming Machu Picchu pottery to be all that Cuzco pottery was in the last part of the Inca period.

The characteristics, then, of Inca pottery as shown by the Machu Picchu collections, are: (1) The predominance of almost classically graceful shapes such as aryballi, pelikai, dishes, bowls and so on. (2) The widespread and often-repeated use of certain fixed and definite geometric decorations. (3) The general scarcity of anthropomorphic decoration. (4) The occasional association of perfectly recognizable Cuzco shapes and decorations with some element introduced from the coast, such as modelled anthropomorphic handles on dishes or life-like butterflies painted on the bottoms of shallow bowls. (5) Cuzco pottery is, in general, lighter in tone than either Tiahuanaco II or Proto-Nasca. As has been said, pottery of a pure Cuzco type is found from Ecuador to Chile.³² In all this huge area a surprising

³⁰ Bingham, 1915, pp. 180 ff.

³¹ Cf. Bingham, 1913, 1915, 1915b, 1916; Eaton, 1916; Dorsey, 1901, Pl. XLII; Joyce, 1912, p. 198; Uhle, 1903; Hrdlička, 1916c.

³² Cf. Bamps, 1879, Atlas; Saville, 1907-1910; Rivet, 1912; Oyarzun, 1910.

steadfastness to the original type is to be observed; but, nevertheless, local sub-types do develop in several cases. Such a one is the Inca style on the islands of Titicaca and Coati in Lake Titicaca. There, though still perfectly definitely related to the usual Cuzco types, the pottery is marked by a tendency to break the decorated surface up into very small geometric areas which are made prominent by the contrasting of dark brown with cream color. This is noticeable in the collections from Titicaca now in the American Museum of Natural History, New York.

As is usually the case, the textiles, though showing affinities of design with the pottery, are richer in the variety of their colors. The Incas' subjects were as good weavers as any in aboriginal Peru. That their art was strong and flourishing at the time of the Spanish conquest is proved by the fact that shortly after the conquest there were produced some of the finest specimens of Inca tapestry that we have.

Unlike their predecessors, the people of Tiahuanaco II, the Incas' subjects, though admirable architects, did not decorate their buildings with any great amount of carving. To replace the decoration applied to the walls of huge stones by the carvings of Tiahuanaco II type, the subjects of the Incas evolved a new type of architecture. It takes the form of exquisite walls made of reasonably large stones laid in courses of quite astonishing accuracy. Often the lowest course would be made of stones of say a foot high; the next course would be slightly lower, and so on to the top. The effect of this technique was a wall of wonderful symmetry and beauty. Such a wall needed no carving to make it sightly. Dr. Bingham gives an excellent picture of this late Inca type of wall.⁸⁸

This Inca culture, then, was the last of the long series of pre-Columbian Peruvian cultures. With our brief review of the chief features of those cultures thus brought to a conclusion, we will now turn to a detailed analysis of the Plates which accompany this paper and which have been chosen with a view to setting forth the more prominent characteristics of the principal culture-types.

⁸⁸ Bingham, 1913, p. 488.

III. ANALYSES OF THE ARTS OR CULTURES.

I. A CRITICAL ANALYSIS OF PROTO-CHIMU AND PROTO-NASCA ART.

Aside from examining the Plates that accompany this paper, the reader is urged to examine those that are to be found in the works referred to in the footnote.¹ It is hoped, however, that the examples of the two very early types of art herewith presented will prove sufficient material for those who cannot seek further for it.

Plate I shows five specimens of Proto-Chimu art, all to be found in the Peabody Museum at Cambridge, Mass. It will readily be observed that two characteristics hold true for all the specimens given; these are: light coloration, and grace of line. In Figures 1-4, the chief source of admiration on the student's part is the wonderfully life-like modelling. Figures 1 and 2 are especially remarkable in this respect. In Figure 1 we see a man attacking a deer with a massive club. His small dog looks on. With the exception of the deer's body and the man's feet the modelling is far better than that in some of the early Egyptian and Cretan figures. The man's clothes seem to consist of a loose-fitting shirt with sleeves and of a hat or helmet adorned with two rosette-like protuberances and a sort of frontal ridge. From the helmet proper a strip of cloth runs down to and under the man's chin. The nose of the man is large and somewhat of the Semitic type. The chin is somewhat receding. The dog on this vase is probably one of those which the early people kept for use in the chase.² On the body of the vase is to be seen a composition that is very typical of Proto-Chimu art. It is painted in dark brown on the white slip of the vase and, like the modelled group above, represents a hunting scene. It should be noted that the costumes of the figures in the painted part of the decoration differ considerably from that of the modelled man.

¹ Cf. Uhle, 1908, 1910, 1912, 1913, 1913b, 1914; cf. Reiss und Stubel, 1880-87; Baessler, 1902-03; Putnam, 1914; Theresa von Bayern, 1907; Joyce, 1912, 1913b; Beuchat, 1912; Mead, 1915; Squier, 1877; Berthon, 1911; Rivero and von Tschudi, 1851; and many other works.

² Cf. Joyce, 1912, p. 125.

The former, for example, have the black "stockings" that are so frequently seen in Proto-Chimu vase-paintings; also, the painted men have a very different headdress from the modelled man. But most important of all is the fact that the painted men appear to be either wearing masks or else to be adorned with face-paint. Indeed, if the latter is the case, the "stockings," "knee-caps" and "sleeves" must be assumed to be nothing less than body-painting. From all of these elements of decoration the modelled man is entirely free. Figure 2 is another type of modelled vase from the Proto-Chimu period. It shows a personage, apparently masked to represent a fox or some such animal, sitting facing a semicircle of five foxes. The personage's headdress, though different from that in Figure 1, is, nevertheless of the same general type. The striking features about this figure are the *headdress* and the *fangs*, to both of which we shall refer later. Again, the back of the middle fox is adorned with a design which Posnansky calls *signo escalonado*—stairsign.⁸ To this also, we shall refer, in another connection. Around the base of the vessel, in the region analogous to that occupied by the painted hunting-scene in Figure 1, we see a landscape. The trees and plants are shown by means of shallow lines engraved, apparently with a blunt stick while the clay was still moist, in the reddish slip of the vessel. This landscape is full of charm because of its quaint realism. It is even possible to attempt to identify the tree as an algaroba and the smaller plants as cactus. This sort of vessel sometimes leads students into attempting an "interpretation" of the scene. While the modelled portion of the vessel undoubtedly represents some sort of ceremony employed by the people of that period, it is, nevertheless, dangerous to reconstruct, let us say, a totémic clan organization, from such evidence as this.

As the vases shown in Figures 1 and 2 represent a very large and important sub-type of the Proto-Chimu pottery, it will be well to summarize briefly our impressions of them before going on to an examination of the other sub-types.

We see that the vessels of this sub-type comprise two separate areas of decoration, each marked by a distinct technique. In both the painted (or engraved) area and the modelled area of

⁸ Posnansky, 1913.

the two vessels we observe the following features: (1) A marked tendency toward realism of representation; (2) A decided lack of rich and varied coloration (dark brown, red and cream color being the tints found); (3) A gracefulness of line which is not constricted by any sort of conventionalization; (4) The use, by several of the human figures, of masks or face-painting, of fangs and of an easily recognizable type of headdress. If the reader will examine the Plates in some of the works already referred to he will see further examples of these characteristics, as well as some others that occur in Proto-Chimu pottery of this sub-type. For example, look at the scenes from vessels shown by Mr. Joyce.⁴ These show new forms of the headdress, the use of face-painting and of masks, the presence of fangs, and also a curious use of girdles ending in serpent heads. The black "stockings" also are found in these figures, as well as in Figure 1 of our Plate I. Also, the use of peculiar fluted wings is rather often met with.⁵

So much, then, for the modelled and painted sub-type of Proto-Chimu vases. There are still several other types for us to consider. Look, for example, at Plate I, Figure 3. This specimen, the original of which is in the Peabody Museum, Cambridge, comes from Chimú (Trujillo) and shows, in addition to the typically Proto-Chimu fangs, a further development of the headdress. The latter seems to be composed of the stiff ridge or core found in the headdresses of Figures 1 and 2 with the addition of ornaments that may be intended for feathers. These feathers are important, and they will be referred to in connection with our analysis of Proto-Nasca art and of the Chavín Stone.

Plate I, Figure 4, shows an example of a type of vessel that has always excited admiration in students of ceramics.⁶ It is called the "Portrait type." Possibly this particular example is not really Proto-Chimu, but similar "portraits" have been found that have painted on them unmistakable Proto-Chimu decorations.

⁴ Joyce, 1912, pp. 126, 127.

⁵ See Joyce, 1912, p. 155, for an admirable specimen of Proto-Chimu vase-painting with fluted wings, serpent-tail and fanged masks. Also examine plates in Reiss and Stübel, 1880-87, and in Baessler, 1902-03.

⁶ See, for example, Jacquemart, 1873, pp. 190 ff.; and Young, 1879, pp. 404 ff.; Squier, 1877, pp. 180 ff.

As the specimen here shown has a headdress that has several points in common with that of the chief figure in Figure 1, it is assumed for the nonce that this "portrait" is Proto-Chimu. No one who has studied a series of these human-faced vessels and has noticed the wide differences and unfailing individualization that characterize each one of them can fail to lean toward the belief that this type of vase is indeed a "portrait type." There is absolutely nothing of inherent impossibility about the idea that a people so highly gifted with plastic skill as the Proto-Chimu people may have developed the habit of employing their vessels as a medium whereby to perpetuate the likenesses of their great men. In any case, empirical evidence leads us to believe that some such habit did prevail, for every good specimen of the "portrait type" portrays an individual, not a type. And it should be noted that realistic portrait-making is in entire accord with the marked realistic tendencies of the Proto-Chimu culture pottery. Nor are "portrait types" lacking in other parts of America.⁷

Last of all, in the matter of Proto-Chimu sub-types, comes that variety which is represented by Plate I, Figure 5. In this division come almost innumerable stylistic decorations which, though they may show slight conventionalization, never show geometrical tendencies to the exclusion of all curves. The present specimen, in the writer's opinion, is intended to represent a starfish.⁸ In this type also occur many variations of the "stair-sign" (*signo escalonado*) often in conjunction with the starfish (or octopus) motif.

Passing over for the present the numerous forms of pottery which may some day be definitely assigned to this period (a passing-over process which will have to be repeated many times in the present state of our information), we will endeavor to draw up a tentative classification of the Proto-Chimu sub-types.

Sub-type I Landscapes. Vessels having modelled scenes as well as painted or engraved ones. Usual colors: white or cream slip, dark brown and red.

⁷ Spinden (1916b) claims them for Central America, and Holmes (1916b) shows an excellent example of aboriginal portraiture from Quirigua.

⁸ It is the opinion of Prof. MacCurdy that the design here mentioned is derived from the octopus, not from the starfish. This, of course, may well be the case.

- Sub-type II Portraits. The faces of the portraits often have features in common with Sub-type I and Sub-type III, (such as headdress, formal incidental decoration motifs, etc.).
- Sub-type III Partly conventionalized decorations. Even these, however, are seldom rectilinear entirely. Cream and red are the more usual colors.
- Sub-type IV Numerous miscellaneous types not yet decided upon.

Having completed our study of the distinguishing elements of Proto-Chimu art, we will now examine into the traits of Proto-Nasca art.

We have seen that realism, grace of line and light coloring were three of the chief characteristics of Proto-Chimu art. We find in Proto-Nasca art an almost complete reversal of these features. There is, to be sure, an apparent attempt at realism in some of the Proto-Nasca sub-types, but it is an unsuccessful one in most cases. Look, for instance, at Plate II, Figure 2, and at Plate II, Figure 1. In both of these we have a survival of the wonderful modelling that marks out Proto-Chimu art from all the rest. Both of these specimens preserve a certain degree of realism. The former, to note the most prominent feature in each case, holds in his left hand a spear-thrower almost identical with those found in Peru by Dr. Uhle.⁹ It would be hard to find a better representation of an object than this one. Then, too, the hands on the other specimen mentioned are absolutely realistic. Their realism consists above all in this: That they are shown in the natural closed position and the finger-nails of the fingers are not shown. These two specimens, therefore, both with five-digit hands and fairly well-modelled heads, may be said to represent a survival of the Proto-Chimu art-tradition in the Proto-Nasca type and, at the same time, to constitute the nearest approach of Proto-Nasca art to realism.

Wares of this type were not, however, the most characteristic expression of Proto-Nasca art. Far more common and far more typical were such productions as those that appear on Plate II, Figures 3-6, and Plates III and IV. Excellent examples of Proto-Nasca plastic art are given by numerous writers, to whose

⁹ Uhle, 1909.

work the reader is urged to refer.¹⁰ By study of the Plates that accompany this article and those that go with the works here referred to, it will be seen that in the matter of form the Proto-Nasca pottery was not so diverse as the Proto-Chimu. A tentative division into sub-types will, as in the case of Proto-Chimu, be offered for the Proto-Nasca art. At present we will limit ourselves to a consideration of the decoration.

Color is indubitably the "strong point" of Proto-Nasca art. For example, Plate II, Figures 3, 4 and 6 are all of remarkably rich tonality. Red, brown, gray, yellow and black, as well as cream-color, are the tints most frequently met with. The finish of some of the Proto-Nasca pots is so lustrous as almost to suggest a glaze. As for the subject-matter of Proto-Nasca art, it cannot be so easily described as that of Proto-Chimu, although the two have much in common in that respect. Proto-Nasca vase-paintings mostly concern themselves with the portrayal of a few personages who, being few in number, occur again and again in the vase paintings. These paintings were no doubt supposed to represent deities or mythical persons; at all events, there is absolutely nothing realistic about them; they are merely elaborate and formal portrayals of putative objects of veneration. The chief personages of Proto-Nasca art seem to be two in number. Each occurs in several variations. We will describe them in turn, applying arbitrary names for the sake of ease of identification.

The "Centipede God." See Plate II, Figures 3 and 4, Plate III, Figures 1 and 2, and Plate IV, Figure 2. The name chosen is suggested by the fact that this 'god' is usually shown as having a long body at right angles to his face and fringed with spike-like objects that are evidently conventionalized legs. Sometimes he has a series of subsidiary human faces where the legs ought to be; sometimes both legs and faces occur (as in Plate III, Figure 2). Again, the "Centipede God" is shown as a man, strongly conventionalized to be sure, who has centipede attributes such as the girdle shown in Plate II, Figure 4. It is very interesting to note certain well nigh invariable features that mark the portrayal of the "Centipede God," whether that 'god' is

¹⁰ Joyce, 1912, Plate I, Joyce, 1913b; Therese von Bayern, 1907; Reiss u. Stübel; Baessler, 1902-03; Berthon, 1911, Plates I-VI; Uhle, 1913b, p. 358 ff.

the chief portion of the design or merely a comparatively insignificant adjunct to the design. These features are: (1) The use of a very distinctive mouth-mask; (2) The predominance of hands with less than the true number of digits, usually with four digits; (3) The frequency with which the tongue is shown sticking out of the mouth; (4) The almost invariable presence of a broad flat headdress in the form of a rather highly conventionalized human face; (5) The frequent appearance of ceremonial staffs held in the hands. We will say a few words about each of these features in turn.

(1) The Mouth Mask. Plate II, Figure 3, and Plate III, Figures 1 and 3, show very typical forms of this element. In Plate III, Figure 1, it is seen to consist of a central portion with mouth- and nostril-holes and of two wing-like portions, one on each side of the mouth. These wings are marked by lines of a conventional nature that may be a survival of the curling-feather-like rays that distinguish the mouth-mask of Figure 3. These rays are perhaps related to certain elements of decoration that occur in later arts, as well as in other sub-types of Proto-Nasca art.

(2) Four-digit Hands. Plate II, Figure 3; Plates III, Figures 2 and 3, and IV, Figure 2, all show typical examples of the four-digit hands that so often accompany, as in all these instances, one or more of the several criteria that mark this "Centipede God" motif. The development from natural five-digit hands to these very artificial conventionalized four-digit hands is a matter of great importance, as will be shown in connection with Tiahuanaco II art.

(3) The Protruding Tongue. The Plates already mentioned show this feature. In the pottery with the "Centipede God" motif the protruding tongue is not nearly so widely developed as it is in some other cases, especially in that of the textiles. But even in the "Centipede God" figure on Plate III, Figure 2, the tongue shows the beginnings of decoration on its upper surface. The element of tongue-decoration becomes very prominent in other types of Proto-Nasca pottery.

(4) The Broad Flat Headdress. Plate III, Figure 1, shows a standard form of the "Centipede God's" headdress. The brim almost always consists of at least two layers separated by a line. In the center, over the eyes of the 'god,' is a conventionalized

human face. Typical forms of this headdress are shown on Plate II, Figure 3, on Plates III and IV.

(5) The Ceremonial Staffs. The Plates already mentioned show good examples of the staffs. It is to be noted that in vase-paintings where the mouth-mask, headdress and hands preserve the greatest amount of naturalism the staff most closely approximates the spear-thrower shown in Plate II, Figure 2, though at no time is the resemblance very strong. In the more conventionalized designs, however, the staffs (here usually two in number and so arranged as to be bilaterally symmetrical) are themselves so conventionalized as to be scarcely definable in regard to their use.

Bearing in mind the well-known principles that apply to decorative arts, the principles of elimination and simplification which will be spoken of later, the writer ventures to suggest that of the two groups of pottery that we have been studying, that exemplified by Plate II, Figures 1, 2 and 3, is the older, and that the "Centipede Gods" on Plates II, III and IV were a later style. So much, then, for the modelled ware and for the "Centipede God" motif.

We will now examine another motif which may be called, for the sake of convenience, the "Multiple-headed God." Our Plate II, Figure 5, shows an excellent specimen of this motif. Another is shown by Joyce (1912, Plate I). In this motif the heads of the personage consist of hardly more than eyes and mouth and tongue. In some cases, the body of the 'god' has a chief head in approximately the correct position. Then, running out from the shoulders, are a lot of subsidiary heads attached to the body by their run-out tongues. The subsidiary heads are decorated by feather-like rays reminiscent of the decorations on the mouth mask seen on Plate III, Figure 3. Sometimes, as in Joyce's Plate I, the chief head has a headdress of the type associated with the "Centipede God." Also, the "Multiple-headed God" and the "Centipede God" have other points in common, notably: (1) The occasional presence of a centipede-like girdle with the tongue sticking out (see Joyce, 1912, Plate I); (2) The presence of four-digit hands (though five-digit hands sometimes appear in both); (3) The presence of the minor decoration, seen in our Plate II, Figure 3, and in Joyce's Plate I, made up

of two thick rings with a tassel or tassels hanging from them: (4) The beginnings of a marked tendency toward bilateral symmetry, both of line and of color: (5) The continuance in the "Multiple-headed God" motif of the rich coloration found in the "Centipede God" motif. (Joyce's Plate I shows the presence of buff, blue, yellow, purplish-red, pink, white and black.) The mouth-mask and ceremonial staff usually do not appear in the "Multiple-headed God" motif designs.

The "Centipede God" and the "Multiple-headed God" appear to be the chief personages of Proto-Nasca vase-painting. They do not, however, by any means include all the forms that go to make up this complex art. Space permits us to mention only one other constantly recurring feature. This is the human face which is to be seen in our Plate IV, Figure 2, and in Joyce's Plate I, at the base of the vessels. When this face appears thus, painted, not modelled, it strongly suggests the modelled faces that appear in Plate II, Figure 1. The manner in which the eyes are shown, the hair-dressing, the nose and the mouth are all strikingly alike in both the modelled and the painted versions of the motif. At the same time, it should be noticed that very often lines suggestive of tears run down a short distance from the eyes of the painted forms, but not from those of the modelled ones.

What has been said of Proto-Nasca art is, of course, very far from beginning to be an exhaustive study of that subject. It is, however, enough to give a fair idea of the chief features of that culture. It is but right to say, nevertheless, that aside from the vases bearing decorations more or less anthropomorphic or zoomorphic, whether modelled and painted or merely painted, there is another class of Proto-Nasca vessels which, though having the rich coloration and the same general technique of the other classes, is merely decorated with such patterns as dots, lines and so on like those which appear in some of Berthon's Plates (1911).

We will now attempt to draw up a classification of the subtypes of Proto-Nasca pottery. Then we will take up the question of Proto-Nasca textiles.

Although all Proto-Nasca pottery may be said to be distinguished by a subordination of form to color and of realism to

complexity, it is not enough for us to content ourselves with this general sort of statement. We must look further with a view to establishing various sub-types of Proto-Nasca art, for it must necessarily be assumed that the people who produced the art flourished for at least two or three centuries and that they developed in that time a number of modifications which appear in their productions. Before we do this, however, we must definitely assure ourselves as to whether we have been correct in assuming that Proto-Nasca art was indeed related to or descended from Proto-Chimu art. For the present we shall content ourselves with examining into the relationship of the two without attempting to prove the descent of one from the other. The Plates in this article, those in Joyce's article on the Clan-Ancestor (Joyce, 1913b), those in Berthon (1911), and in the articles by H. R. H. Prinzessin Therese von Bayern (1907), and Uhle (1914), afford ample material for a comparison. An examination of the two arts brings out the following points of contact: (1) The use of eye-painting and masking; (2) The presence of feather-like ornaments; (3) The use, in connection with the costume, of various appendages and adornments derived from or suggested by animals or parts of animals (i. e. such elements as the centipede girdles); (4) The gradual transition from realistic, modelled, five-fingered Proto-Chimu art to partly realistic, modelled five-fingered or four-fingered Proto-Nasca art, together with the apparently contemporaneous rise of non-modelled, constantly more conventionalized forms of vase-painting.

From the foregoing it will be seen that a very real underlying similarity of subject-matter binds Proto-Chimu art to Proto-Nasca.

Reserving for another place the critical consideration as to the descent of Proto-Nasca art, we will now present a tentative classification into sub-types on a combined basis of form and decoration.¹¹

¹¹ The author wishes to call attention to the very able study of Nasca pottery by Edward K. Putnam (1914), and to say that he departs from the classification of Proto-Nasca pottery offered by Mr. Putnam only because it is too detailed for his present purposes and because it does not emphasize the points he wishes to bring out.

CLASSES	REMARKS
I Modelled and painted ware .	The class most like Proto-Chimu.
a Semi-realistic	That is, having fair modelling in combination with five-digit hands.
b Non-realistic	That is, poor modelling combined with four-digit hands.
II Painted ware—not modelled	The predominant Proto-Nasca type.
a “Centipede God” Motif	Perhaps derived in part from the Proto-Chimu habit of masking.
b “Multiple-headed God” Motif	Linked to “Centipede God” in several ways (see above) and to Proto-Chimu by use of feather-like ornaments.
c Painted human face motif	Found usually on the same vessels as the two foregoing types, it is, at the same time, strongly like Class I, a, and Class I, b.
d Miscellaneous	Forms made up of all sorts of elements borrowed from the foregoing types.

Having reviewed the distinguishing marks of Proto-Nasca art as represented by the pottery, we have now arrived at the important question of Proto-Nasca textiles. It has been said by good authorities that there were no textiles dating from a time prior to the rise of the culture of Tiahuanaco II.¹²

It is, however, the opinion of the present writer that this belief is a mistaken one. It will, no doubt, be granted by anyone that if Proto-Nasca textiles *do* survive to the present day, they will have the same or similar designs upon them as do the pottery remains. We shall endeavor to show that such designs do survive in textiles. Before doing so, however, it will be well to remind the reader that there is no class of textiles that can safely be assigned to the Proto-Chimu culture.

The reader's attention is called to Plate IV, Figures 1 and 3. The first shows a woven cloth from Ica now in the Museum of

¹² Joyce, 1912, p. 200; Beuchat, 1912, p. 574.

Fine Arts, Boston. The second shows a border from an Ica shawl in the American Museum of Natural History, New York.


We will begin with an examination of Plate IV, Figure 3. In it we discover a number of striking analogies with Proto-Nasca pottery designs. Like the vase-paintings of the "Centipede-God" type, this design has: (1) A mouth-mask which combines wing-like side ornaments of the same type as those on Plate III, Figures 1 and 3, with a pair of feather-like ornaments reminiscent of those in Plate III, Figure 3. (2) The hands of the figure (as far as one can tell) and its feet have less than the true number of fingers and toes. (3) The tongue is run far out and is highly decorated, a tendency already shown in the pottery. (4) The headdress is broad and flat; it has a brim made up of two layers and there is a conventionalized human face in the center. Compare it with the headdresses on Plate II, Figure 3; on Plate III, Figure 1, and on many other Proto-Nasca vase-paintings of the "Centipede God" type. Also remark that in this textile design, as in some examples of the "Centipede God" pots, the centipede element is preserved by the girdle-like appendage. The tongue of the figure likewise reminds one of the centipede motif. In other words, of the five criteria that we found to be distinctive of the very important "Centipede God" motif Proto-Nasca vessels, four are present in the textile design which we have been studying. Does not this suggest that the textile and the vase-paintings in question have a common source which accounts for their similarities in subject-matter? Again, Plates V and VI seem to have several points in common with Proto-Nasca pottery, although, on account of the comparative complexity of their embroidered designs, it is hard to know whether to compare the personages they portray with "Centipede God" or with the "Multiple-headed God." For this reason, therefore, it will be best for us to content ourselves with comparing these textile designs with Proto-Nasca vase-paintings in general. The following features, then, may be observed in both the textiles in question and in various specimens of Proto-Nasca pottery: (1) The mouth-mask with wing-like side ornaments; (2) The protruding tongue, highly decorated and endowed with centipede-like attributes; (3) The broad flat headdress decorated with a conventionalized human face; (4) The color-scheme is very suggestive of Proto-Nasca pottery.

The foregoing remarks are meant to convey the impression that Proto-Nasca designs do occur on both pottery and embroidered textiles. Since this is so, the writer finds it impossible to imagine how anyone can assume, as some have done, that they were not made by the same people. Differences between the textile designs and the pottery designs do exist, of course, but in the writer's opinion, they may all be explained by the difference in medium, the technique of pottery decoration not unnaturally causing results divergent from those produced by textile embroidery.

Without pausing at present to discuss the transition from Proto-Nasca art to Tiahuanaco II art, we will now turn our attention to the region of Lake Titicaca and study the early cultures in that area.

2. A CRITICAL ANALYSIS OF TIAHUANACO II ART.

Hitherto in our study we have had to deal mainly with pottery and textiles. In the case of Tiahuanaco II art stone adds itself to the other two as an important art-medium. If it were our purpose to follow Tiahuanaco II art in all its ramifications, we should have to consider the bronze work of northern Argentina as well. The chief media, then, for the art of the exceedingly important period we are about to study are: in the highlands, stone and pottery; in the coast-regions, pottery and textiles.


We will first examine the Tiahuanaco II art with a view to setting forth its content and characteristics. The reader is urged to turn to Plate VII which shows the chief figure of the great monolithic gateway at Tiahuanaco. The Plates in Posnansky's work on this site should likewise be consulted.¹³ For want of a better term we have referred to this figure as the "Weeping God." Variations of it occur over a huge area, and in stone, pottery, textiles and bronze. Sometimes the "tears" are lacking, but there is always some other feature to identify the several variations. We will now minutely examine the Weeping God on the great monolithic gateway. He is a short stocky personage with a large head which is almost square. Around the head is a sort of frame; the inner band of the frame is adorned with a series of the  sign which we shall find often later on.

¹³ Posnansky, 1914, Plates LXV-LXXXIV.

Standing out from the inner band are twenty-four ray-like tabs or tassels. These tassels, all of them conventionalized, fall into three groups or classes. (1) The puma-headed tassels, six in number and much conventionalized; (2) Tassels, seventeen in number, composed of what look like ribbons ended off by stone rings, but which cannot well be described with accuracy because of their conventional nature: (3) One anthropomorphic tassel showing the conventionalized face of a man with eyebrows and nose shown continuous. The face of the Weeping God has been destroyed by time to a deplorable extent, but two large round eyes, deeply sunk, remain almost unharmed. From the eyes hang two bands ended off with puma-heads. On each of the bands are two sunken dots suggestive of "tears." The nose of the figure has been shattered, but it was probably once quite prominent. At present it is squarish and rather broad and long. The whole face is covered over with traces of secondary ornamentation. The body is not separated from the head by any definite neck. The mouth is a mere rectangular slit sunk in the face, totally lacking in any true modelling, the body is short and chunky, and the legs are much too short to be in proportion, unless, indeed, a kneeling posture is indicated. The garment of the figure is a short fringed skirt held up by shoulder-bands. The top of the skirt is marked with rectangular decoration of a type to be observed elsewhere on the carving, and by two puma-heads similar to those on the headdress and elsewhere. The fringe of the skirt is made up of six human faces of the same type as that noted on the headdress. The shoulder-bands are adorned with a conventionalized figure alternated with conventionalized bird-heads. A large breast ornament hangs between the shoulder-bands. It has the form of a fish in semi-lunar posture with his head to the left and turned upward and his tail, to the right, also turned upward. The face of the fish recalls the conventionalized human faces already noted. Just below the fish is a repetition of the conventionalized figure that appears on the shoulder-bands and two other examples of the bird-heads that also appear there. The arms of the Weeping God, though not at all true to nature, are the best modelled parts of the figure. At each elbow are two puma-heads, one above the other. From the two lower puma-heads hang two more conventionalized human faces. The hands of the figure have but four digits. In the right hand is a large

ceremonial staff. The upper half of it bears a rectangular decoration just like that on some of the tabs of the headdress. It is surmounted by an indeterminate object. The lower half of the staff is decorated in much the same way save for the fact that the central panel is sunk as it is on the upper border of the skirt. The base of the staff consists of a conventionalized bird-head. In the case of the staff in the left hand of the Weeping God we find the lower half identical with the one just described. The upper half, however, is bifurcated and the two prongs are topped by bird-heads similar to those already seen on the breast-ornament.

Having enumerated in detail the features of the Weeping God, it will be well for us to note in general terms some of its characteristics. In the Weeping God, then, we have a highly conventionalized bas-relief in stone which shows considerable artistic advance. For one thing, the tendency toward bilateral symmetry noted in connection with Proto-Nasca art appears again here, and it has gained considerably in strength. Save for the staffs and the breast-ornament, the Weeping God is bilaterally symmetrical, and the exceptions to that symmetry do not in the least interfere with the impression of perfect bilateral balance. Moreover, the constant re-statement of three or four motifs of decoration in various combinations is eloquent of conventionalization that has been long in developing. Lastly, the technique of the bas-relief is of that square-edged type which would naturally develop out of a round-surfaced stone technique after conventionalization had set in.

On the same gateway with the Weeping God are forty-eight secondary figures in relief of the same type. There are twenty-four on each side of the central figure. Here again, the tendency toward bilateral symmetry is observable, for all the figures face toward the Weeping God. These secondary personages fall into two classes: (1) Those with bird-like bodies and human faces; and, (2) Those with bird-like bodies and bird faces. Each of them bears before him a staff which approximates in form to one or the other of those held by the Weeping God. All the figures of both classes have four-digit hands, tears and tear-lines, and a constant repetition of the  sign, and of the puma-, fish- and bird-head motifs. The wings of the figures are, in part, almost realistic, and they recall the fluted wings we noted in con-

nection with the Proto-Chimu art. All the figures are represented as running toward the Weeping God, and the speed of their motion is well indicated by their cloak-like garments which are streaming out behind them.

Repetition and re-statement of decorative motifs and themes, together with the tendency toward symmetry, may be said to be the underlying principle of the conventionalities of Tiahuanaco II art as embodied in the monolithic gateway. It is especially noted in the frieze which runs the whole length of the gateway just below the Weeping God and just above the doorway. Throughout that whole composition fragments and portions of motifs already noted can be picked out.¹⁴

Aside from the typical Tiahuanaco II decorations on the several gateways at Tiahuanaco (the others are unimportant), the same or similar motifs appear on the pottery from that vicinity. The American Museum of Natural History has a fine collection of Tiahuanaco II pottery from Copacabana and Tiahuanaco. In general the tonality is rather sombre, red and black being the most frequent colors. Sometimes, however, white and orange also appear. In the Peabody Museum at Harvard University there is a small but excellent cup of this period decorated with the face of the Weeping God. Sometimes, as in the case of some of the New York specimens, the Weeping God appears in the pottery without his tears; at other times the decoration takes the form of parts of the secondary motifs, such as puma- or bird-heads in the Tiahuanaco style, or variations of the second type of tab on the Weeping God's headdress (i. e. the "ribbon-and-stone-ring" motif). Cups, bowls, ollas and vessels with spouts like those on teapots are the commoner forms. One of the New York specimens measures almost a foot across although it is but a fragment. Modelled puma-heads in clay also occur. In short, the plastic art of the Tiahuanaco II period, although it is none too plentifully represented in our museums, is richly diversified.

Our Plate VIII, Figure 1, shows a poncho from Tiahuanaco now in the American Museum of Natural History, New York. The writer believes that, although it bears none of the motifs so far shown to have been typical of Tiahuanaco II art, it does bear a swastika-like motif on its border, and is therefore to be

¹⁴ See Posnansky, 1914, Plates LXXIII-LXXXI.



connected with a cup with the same motif shown by Joyce (1912, p. 207). This cup, both because of the puma-heads and because of the general technique, is obviously Tiahuanaco II. The swastika is a motif which is excessively rare in Peruvian art. The ones in this specimen are not perfect in form. The reader is warned that this garment may not be Tiahuanaco II after all, though the writer now believes that it is.

Plate VIII, Figure 2, shows a fine piece of cloth from the Nasca region. It has affinities with both the Proto-Nasca and Tiahuanaco II styles as follows: With Proto-Nasca, face-painting (or masking), centipede element, and coloration; with Tiahuanaco II, tear-lines, eyebrows and nose in T form, three-digit hands. The specimen is in the Museum of Fine Arts, Boston, and is the gift of Dr. Denman Waldo Ross.

Though it may at first seem illogical, we will now turn our attention to the Tiahuanaco II art of the coast; then we will study it in another region of the highlands. The reason for this course will become apparent later.

The writer regrets that he has not been able to obtain any satisfactory pictures of coast Tiahuanaco II art. Much material is readily accessible to the student, however, and the following works should be consulted: *Baessler, 1902-03; Reiss und Stübel, 1880-87; Holmes, 1889; Oyarzún, 1910; Uhle, 1901, 1902, 1903, 1908, 1910, 1910b, 1910c, 1912, 1913, 1913b, 1914; Putnam, F. K., 1914; Therese von Bayern, 1907; Beuchat, 1912; Joyce, 1912, 1913b; Bamps, 1879.* (The reader is especially referred to the works in italics.)

It will be remembered that in the Tiahuanaco II art of the interior two things were very noticeable: the tendency toward bilateral symmetry in the design, and the comparative poorness of coloration. Of these characteristics only the former appears on the coast. As in the case of Proto-Nasca art, coloration on both vessels and textiles was extremely rich. For example, look at Plate 134, Figure 373, in Baessler. The design that appears at that place shows two birds with squarish heads. The design comes from Pachacamac. A detailed description of it may be of use to the reader. The two birds, whose heads alone appear, face one another. They have hawk-like beaks, darkened eye-areas and headdresses adorned with tabs ending off in three fringes just like those on the minor figures of the monolithic gate-

way at Tiahuanaco. The angularity so noticeable in the art of this period at Tiahuanaco itself is here preserved to a considerable degree. Between the two bird-heads and around each of them is a frame or border adorned with repetitions of the  sign. Although the Plate in question is not in color, several tints are indicated. Again, Baessler, Plate 144, Figure 403, shows a wonderful specimen of coast Tiahuanaco II art. It is a goblet from Pachamac adorned with a very beautiful design. The colors are cream, purple, gray, brown, red and black. The finish is lustrous and the arrangement of the color-areas is masterly. The decoration resolves itself into several bands. At the top is a band of the stair-sign motif; it is gray with purple borders. Attached to the outer edge of the borders are a number of conventionalized puma-heads in purple. They are reminiscent of those on the monolithic gateway. Those on the top of the band face to the reader's right; the ones at the bottom face to the left. On the gray central stripe of the stair-sign band are a number of conventionalized three-digit bands in black and gray alternated with similar feet in brown, cream and black. Below this band of decoration comes a narrower one made up of  signs in red on a cream ground. Below that, in turn, comes a wide band of black on which is painted an almost bilaterally symmetrical square-headed Weeping God. A slight difference in the two ends of his mouth is the sole exception to symmetry. His eyes are in cream and black and, like those of the Weeping God on the monolithic gateway, are large and round with a band of "tears" running down from each of them. The face is red, the nose, gray in color, is broad and squarish like that of the Weeping God at Tiahuanaco. His gray lips form a rectangular mouth containing three groups of rectangular teeth and two groups of fangs, the order being, from left to right, teeth-fangs-teeth-fangs-teeth. The teeth are cream-colored. Finally, at the bottom of the design, comes a band containing twelve oblong rectangles on each of which are two small disks of color with a dot in the center. These rectangles are arranged in double file, six in a row. They are arranged in the manner here approximately indicated, and they may be said to be a sort of study in color-arrangement. Numbers 1, 3, 5, 8, 10 and 12 are red with cream disks; 2 is cream with purple disks; 4, 9 and 11 are gray with red,

purple, red disks respectively; 6 and 7 are purple with cream disks. What this design can have been intended to represent it is difficult to imagine. The only thing it seems to bear the slightest resemblance to is the group of finds on the island of La Plata, Ecuador, which Dorsey called "Perforated and engraved stones." These objects are small rectangular oblongs upon which are engraved circles with a dot, the number varying from three circles up to eight. Dorsey suggests that perhaps the stones in question were used in some game.¹⁵

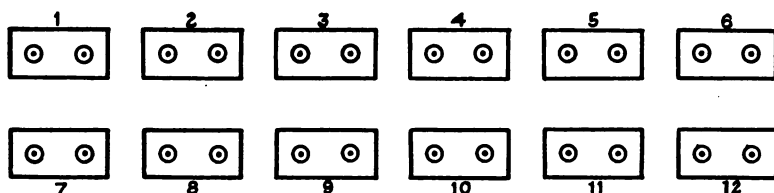


FIG. 1.

The decoration composed of small circles with a dot in the centre occurs also on some objects from Machu Picchu. Its occurrence there may mean one of several things: (1) That some subjects of the Tiahuanaco II "empire" were once at Vilcabamba and left these objects behind them; (2) That the subjects of the Inca who dwelt at Vilcabamba happened to see the motif on some remains of the former period and copied it; (3) That the design, which is essentially simple, was "invented" twice, first by the coast Tiahuanaco II people, secondly by the Inca's subjects. The writer inclines to the belief that the last is the correct explanation. It is, however, so simple a design that it has been "invented" again and again in various parts of the world.

One more example of Tiahuanaco II art in connection with the pottery of the coast will serve to round out our present brief account of the matter. It is found in Baessler, Plate 140, Figure 392, and it shows another variation of the square-headed Weeping God motif. The colors are red, cream, brown and white. The figure is shown at full length. As before, the resemblances to the Weeping God of Tiahuanaco, despite the divergences, are

¹⁵ Dorsey, 1901, p. 262, and Plate LVII.

very marked. The face of this coast Weeping God, then, is surrounded by a frame strikingly like that of its prototype. From the inner band decorated with dots spring eleven tab-like decorations which fall into three groups on the basis of form: (1) Three straight tassels ending in a fringe of three pieces; (2) Six tabs reminiscent of the ribbon-and-stone-ring tassels of the Weeping God of Tiahuanaco; (3) Two long tabs ending off in an affair similar to the fringed tabs of the first type. All these are arranged about the face in such a manner as to result in absolute symmetry. In fact, the whole figure is absolutely symmetrical save for the arrangement of the color-areas. The eyes are cream and brown and are large; the "tears" are indicated merely by two lines, one running down from each eye. The nose is broad and square; the mouth rectangular with eight square teeth and no fangs. Two hands with four digits grasp two staffs which are exactly alike except for color and which are arranged symmetrically. They suggest tremendously conventionalized bows, and are adorned with repetitions of the fringed tab element. In short, this figure, besides presenting several very close resemblances to the Weeping God of Tiahuanaco in its details, resembles it in more general terms also. We find in the Tiahuanaco figure a strong tendency toward bilateral symmetry, a symmetry which is fully attained in this coast figure. More than that, we observe that the two have another significant characteristic in common, namely, the constant re-statement of minor decorative elements (such as the fringed tab). These resemblances are extremely significant.

So much, then, for Tiahuanaco II designs on the pottery of the coast. The material relating to Tiahuanaco II designs in coast textiles is no less ample, and the evidence it presents points just the same way as that offered by the pottery. We will, therefore, consider only one example of Tiahuanaco II coast textile-design. It is shown by Reiss and Stübel, vol. II, Plate 49. It is a rich garment from Ancon. There are two variations either of the Weeping God himself or of the two types of minor figures on the monolithic gateway. We will enumerate the analogies between this design and other arts that we have examined. One of the two variations has: (1) A human face and a head-dress suggestive of the first type of minor figure on the monolithic gateway (i. e. human face with bird body); (2) Tears and tear-lines; (3) Four-digit hands; (4) Two staves; (5)

Shoulder-bands; (6) Fish and bird attendants; and, (7) A mouth similar in shape to those on the monolithic gateway. The other variation has: (1) Fluted wings recalling both those found in Proto-Chimu art and those found on the minor figures of the monolithic gateway; (2) Five-digit hands reminiscent of those on some of statues at Tiahuanaco and of Proto-Chimu art, also; (3) Tears and tear-lines; (4) One staff; (5) A decoration on the headdress suggestive of the "ribbon-and-stone-ring" motif of the Weeping God both at Tiahuanaco and on the pottery just reviewed. The colors in this tapestry are by far the richest we have yet come across, and they are not likely to be surpassed. They are yellow, light yellow-brown, dark yellow-brown, red, pink, pale green, purple, black and white. The effect is one of great richness, and also of a generally light tonality, wherein, perhaps, we may see the influence of Proto-Chimu art. To sum up our impressions of coast Tiahuanaco II art we will say that it derives its minor motifs and its tendency toward symmetry, or rather its marked indulgence in symmetry, directly from Tiahuanaco which also provided most of the subject-matter. The rich coloring, however, came from Proto-Nasca.

Having now completed our survey of Tiahuanaco II art in the Titicaca drainage and on the coast, we will examine its manifestations in another part of the highlands. Before doing so, however, we will mention in passing the fact that save for a vestige here and there Tiahuanaco II art does not appear prominently in the Cuzco region. One exception to this rule is a pottery vessel adorned with an anthropomorphic puma having four digits, fangs and tab-like head ornaments. Its provenance is Cuzco, and it is shown by Seler.¹⁶

It is the Tiahuanaco II art at Chavin de Huantar, however, that claims the major part of our attention.

The chief example of ancient art at Chavin is the famous greater Chavin monolith. This wonderful piece of stone-carving is in the Museo Nacional at Lima. It is about six feet long and two broad.¹⁷ Probably no other single artifact from Peru helps more than this in the study of the relations between Proto-

¹⁶ Seler, 1893, Plate VII, Fig. 8.


¹⁷ The writer has seen and examined the original stone. Both Sir Clements Markham and Mr. Joyce are mistaken in thinking the stone to be twenty-five feet long. Markham, 1912, p. 34; Joyce, 1912, p. 176.

Chimu, Proto-Nasca and Tiahuanaco II arts. Several able studies of the stone have appeared, chief among which are two by Markham and that by Polo.¹⁸ With the aid of our Plate IX we will now examine this stone and its bearing upon our subject.

The characteristic of the stone which first strikes the beholder is the tremendous elaboration of the design. One has to study it carefully before it resolves itself into its component parts. When this is done, it becomes apparent that the design falls into halves, the lower of which shows a personage holding two staves, and the upper of which is made up of a mass of inverted faces with their secondary decorations. We will study the halves in that order. The personage is unquestionably derived in part from the Weeping God motif. The face is square and is edged with serpent-heads faintly analogous to the tab-like ornaments of the Weeping God. The face, on the other hand, is utterly different in both content and treatment from that of the Weeping God. Indeed, it is very difficult to decide just which of the numerous complex features belong to the face of the personage. One may assume, if he chooses, that the two upper dots are his eyes and the involutions just above them are conventionalized eyebrows while the two dots below are nostrils. This is, perhaps, the most satisfactory interpretation.¹⁹ The mouth which, from one aspect, looks like an adaptation of the toothed and fanged rectangular mouth seen in coast Tiahuanaco II, again presents difficulties because, on turning the Plate upside down, it turns out that the mouth is formed by two fanged puma-heads set nose to nose and lip to lip. It may be suggested that in the group of details formed by the puma-heads and the twined serpent-heads just behind each of them we see a faint survival and tremendous conventionalization of the mouth-mask of Proto-Nasca art. As in the case of the Weeping God on the monolithic gateway, the body is short and square. There are no

¹⁸ Markham, 1904 and 1908; Polo, 1899.

¹⁹ Prof. MacCurdy's interpretation of the plate differs from the writer's, for he thinks the two upper dots to be the nostrils of an inverted face like those on the upper half of the stone. There is a good deal to be said in support of this view. But an examination of our Plate IX, or, still better, the large one in Polo, 1899, will show that the writer's interpretation is also valid. We may say, therefore, that the two dots in question serve, in one position, as eyes for the face of the chief head of the design, and, when reversed, act as nostrils for an inverted subsidiary head.

"tears." There is an area of ornamentation on the breast made up of a new variation of the  sign edged with feather-like ornaments reminiscent of Proto-Chimu art and Proto-Nasca art. (See Plate I, Figure 3, and Plate III, Figure 3.) This feather-motif occurs many times on the stone. The garment of the personage reminds us of that on the Weeping God of Tiahuanaco in that it is a short skirt-like affair. The puma-heads that adorn the upper edge of the Tiahuanaco figure's skirt have here become so conventionalized that it is nearly impossible to recognize them. The fringe of human faces on the Tiahuanaco skirt has become mere unadorned rectangles. The arms, it is well to note, are in exactly the same position and much the same in shape both here and on the monolithic gateway. But a marked difference is found in the hands. At Tiahuanaco we found the hands of the Weeping God were fairly close to nature in their modelling despite the fact that they had but four digits. Here, on the other hand, we find a wider departure from realism in the drop to but three digits and in the elaboration of the finger nails into a decorative element. In the two staves we discover a still wider departure from the original theme. The staves are almost exactly alike, which is in itself a significant matter. They have been widened so as to make room for the immensely elaborate ornamentation with which they are encrusted. So complex, in fact, is the overlaid design that it is nearly impossible longer to distinguish any of the features that we perceived in the staves held by the Weeping God of Tiahuanaco. Some may be able to discover in the formalized faces at the base of the two staves a faint echo of the bird-heads that are found at the bottoms of the Tiahuanaco staves.

So much, then, for the lower half of the design on the Chavin stone. In order properly to study the upper half it will be necessary to reverse the Plate. On doing so we find three grotesque faces proceeding from one another's mouths and each with its tongue protruding and highly decorated. These faces all have fangs, but otherwise they are unlike one another, although the last two from the center do resemble each other closely. The nose of the first face is adorned with a combination of the feather-motif, fang-motif and serpent-head motif. The noses of the other two are much simpler and are marked only by an odd but simple comb-like figure. On each side of the central band of decoration formed by those three faces is a fringe of alternated


serpent-heads and feather-motifs. The tongue of the last head is likewise encrusted with the two.

A word about the general features of this, the greater Chavin stone, should be said before we go on to compare it with other artifacts. It is a bas-relief of the same technique as the Tiahuanaco frieze. The work is finer because the stone lends itself more readily to the cutter's tools.

At Chavin is another remarkable stone carving, the lesser Chavin stone. It is described by Polo and by Enock.²⁰ It was found in an underground chamber; indeed, according to Enock, much of the work and many of the chambers in the "castle of Chavin" are subterranean. This feature is reminiscent of Tiahuanaco itself. The lesser stone is at once similar to and different from the greater. The chief points of likeness are the profuse use of fangs and serpents as decorative motifs, and the constant re-statement of these motifs recalls not only the greater Chavin stone, but also the monolithic gateway. The differences are chiefly these: lack of any trace of comprehensible composition, lack of bilateral symmetry and considerable modification of technique.

As our description has proceeded we have made occasional references to resemblances between the Chavin stones and other objects. It will now be our task to systematize these resemblances. Each of the elements which constitute the resemblances will be found in the following table in its appropriate column:

AFFILIATIONS BETWEEN CHAVIN AND OTHER ARTS.

PROTO-CHIMU	PROTO-NASCA	TIAHUANACO
Fangs		Fangs
Feathers	Feathers	
	Multiple inverted heads.	
	Staves	Puma-heads
		Staves
		Symmetry
	Mouth mask (?)	
	Too few digits	Too few digits
		Skirt
		 sign
		Repetition of motifs in many parts of the design.

²⁰ Enock, 1907, p. 72 ff.; and Polo, 1899.

The table makes clear, perhaps, the three-fold source of the art found in the Chavin stones. We now find ourselves brought to the important question of the historic, artistic and ethnic relations between the three great arts we have studied.

3. RELATIONS BETWEEN PROTO-CHIMU, PROTO-NASCA
AND TIAHUANACO II.

We have now studied three ancient Peruvian cultures. It is obvious that, from both the artistic and the archaeological points of view, they form a group. We must now endeavor to answer the question, How are these cultures connected?

Already we have pointed out the basic similarity in subject matter of Proto-Chimu and Proto-Nasca. From one of those cultures the other in all probability was derived. But which was the elder is only revealed by minute analysis. In the Proto-Chimu we find an art which is of a distinctly advanced nature. It has, so far as we know, no introductory manifestations, cruder in type than itself in its own locality. Inasmuch as advanced arts do not suddenly spring into being from nothingness, it can only be supposed that Proto-Chimu art was introduced into the region with which we associate it from some other region. The same may be said of the Proto-Nasca art. Uhle and Joyce seem to incline to the belief that this art is the elder of the two, and Uhle believes it to have had an origin in the north, perhaps in Middle America.²¹

Let us see, then, if Proto-Nasca can really be justly considered older than Proto-Chimu. In doing this we must first determine from what area or areas it could have been derived (assuming that it *was* derived from some source outside of the Andean area). A rapid survey of the whole field of American civilizations assures us that only from one area could such cultures as the Proto-Nasca and Proto-Chimu have been derived—Middle America. There is much evidence that seems to point toward all the South American cultures as having been derived from the region to the north, but unfortunately this is not the place to examine that evidence. We will assume, therefore, that if, as seems probable, the Proto-Nasca and Proto-Chimu cultures *were*

²¹ Uhle, 1913, pp. 341 ff.; 1914, pp. 15 ff.; Joyce, 1912, pp. 178 ff.; Means, 1917.

the result of a cultural migration, that migration must have had its origin in Middle America. From a geographical standpoint, then, it would be difficult to explain why the migrants, on their way south, passed the region of Chimu and went first to that of Nasca where they developed the Proto-Nasca art after their arrival, and then gradually spread north along the coast, in time reaching Chimu where the Proto-Chimu culture was perfected. This theory is almost impossible to support on geographical grounds. But geographical objections are not the only ones. Other and more serious drawbacks to the theory present themselves.

These drawbacks we will now enumerate. In Proto-Chimu art we have a realistic art which has so thoroughly outlived the preparatory stages characteristic of all arts that there is hardly a trace left of the crudenesses that mark the infancy of all sub-civilized or high primitive arts.²² It is a decorative art that has reached so high a level as to combine no small degree of representation with its decorative purpose. In other words, Proto-Chimu art is one ripe for the influence of several principles of art-development. These principles all find their natural resultant in Proto-Nasca art.

A few quotations from Dr. Spinden's work, "A Study of Maya Art," will make clear this point. The mere fact that Dr. Spinden is speaking of Middle American art does not alter the fact that what he says applies equally well to Peruvian art or to any other art of similar rank.²³

"In the imaginative modification of any given natural figure, for the purposes of decorative art, there are a number of rather definite processes. Each of these is amenable to the fundamental principles of design, such as balance, rhythm and harmony, as these terms have been elucidated by Dr. Ross.²⁴ Each process may show, moreover, the phases of conscious and unconscious manipulation of the subject matter. Lastly, these processes of intensive development of a design motive, . . . work both singly and in combination. It is possible to detect much of the counterplay.

²² The general remarks made here are intended to apply solely to decorative, as contrasted with representative, art.

²³ Spinden, 1913, p. 38 ff.

²⁴ Ross, 1901, 1907.

"The processes are: 1. Simplification. 2. Elaboration. 3. Elimination. 4. Substitution.

"Careful analysis of one group of designs after another, during which special attention is paid to the changes in homologous parts, makes pretty clear the matter in which the imagination works. In the first place, imagination does not create, it merely reshapes and recombines, taking suggestions and material from any thing lying within the field of experience. . . .

"*Simplification.* . . . Dr. Harrison Allen discusses the relations between natural forms and art forms. He finds that the tendencies of conventional art are:

- 1st, to repeat the normal lines of the model;
- 2nd, to diminish the normal lines of the model;
- 3rd, to modify according to a symbol;
- 4th, to modify according to mystic or religious ideas. . . .

"*Elaboration.* Of less real worth in the development of art, but of more common occurrence, is the process of elaboration. This process amplifies rather than reduces and by means of adventitious ornament renders the original form more complex. . . .

"*Elimination.* Elimination of one feature after another of a natural motive till only one or two survive is a common phenomenon the world over in decorative art. In Maya art the process is frequently observed in the case of the serpent. Very often the entire lower jaw is omitted. . . .

"*Substitution.* The process of substitution likewise plays a great part in all highly developed art, whether barbaric or civilized. The substitution of new and striking details for old and commonplace ones—even at the cost of the first meaning of the design—is one of the simplest and most natural ways by which imagination can reconstruct and revivify worn-out subjects. . . . Especially in decorative art, details of a composition realistic or geometric may be progressively replaced by other quite different details until in the end only a trace of the original setting remains." ²⁵

Let us now seek carefully to apply the principles outlined by Dr. Spinden to Proto-Chimu, Proto-Nasca and Tiahuanaco II arts. We will take up the principles in order. We find, in the transition from Proto-Chimu to Proto-Nasca and to Tiahuanaco II (at Tiahuanaco, on the coast, and at Chavin), that an important part is played by the second aspect of *Simplification*. We have in Proto-Chimu a highly realistic decorative art in which both modelling and painting seek to approach as nearly

²⁵ Cf. Allen, 1881; Batchelder, 1910; MacCurdy, 1911, 127.

as possible to the outlines of natural models. The outcome of this seeking is skillful modelling and the correct number of such parts as fingers and toes. In Proto-Nasca art, on the other hand, the principle of simplification finds reaction in the diminishing of the tendency toward modelled representation and of the habit of carefully representing the correct number of fingers and toes. The result is a simplification of the form of the vessels and of the outlines of the hands at the expense of truth. The principle of simplification makes itself still more felt in the transition from Proto-Nasca to Tiahuanaco II. In the former it had only begun to make itself apparent; modelling, of a simplified sort, to be sure, still survived, as did also five-fingered hands. In Tiahuanaco II, however, pottery with modelled forms of men or animals is more rare, though modelling in stone is still found, probably on account of the influence of Tiahuanaco I. But five-fingered hands are here in the minority to a decided degree. Simplification has caused the vanishing of realistic hands from the decoration on the monolithic gateway. The status remains the same in coast Tiahuanaco II. In the greater Chavin stone, however, we find the last result of the influence of the principle of simplification. In this stone the modelling is at its lowest ebb, and the hands, with but three digits here, have lost nearly all semblance to reality, and have become mere elements in the scheme of decoration. Thus we see that simplification leads us, step by step, down the line of the arts of this period—Proto-Chimu, Proto-Nasca, Tiahuanaco II—in the order named, with the Chavin stone as the culmination of its influence.

Let us now find out what application the principle of *Elaboration* has to these arts. In Proto-Chimu we found that fangs, eye-painting, animal-masks, animal-disguises and other similar features were represented. Each of these is acted upon by the principle of elaboration. Fangs, it is true, are not a prominent element of Proto-Nasca art. But they appear with great prominence in Tiahuanaco art, both of the mountains and of the coast, and on the Chavin stones they often form an element of decoration of the highest importance. Eye-painting, animal-masks and animal-disguises all survive in Proto-Nasca art and are all more elaborate there than in Proto-Chimu. So much so, in fact, that their development can go but little further, and they almost disappear in Tiahuanaco II art. It may be suggested, however,

that eye-painting is elaborated into the tears and tear-lines of Tiahuanaco II art while masking finds a faint elaborate revival in the puma-heads at the mouth of the chief figure on the larger Chavin stone. To show one more manifestation of the influence of elaboration we will mention the "Multiple-headed God" motif of Proto-Nasca art. The God is always distinguished by the manner in which his subsidiary inverted heads proceed from one another's mouths and by the presence of feather-like secondary ornaments. Elaboration results in the multiple-headed figure on the larger Chavin stone. That figure, like its Proto-Nasca prototype, has several inverted heads proceeding from one another's mouths and it is marked by elaborate secondary decoration in the form of feather-like ornaments. We must note here that as nothing of the sort is to be observed at Tiahuanaco the transmission from Proto-Nasca to Chavin must have been direct, and that the two were at least partly contemporary. Likewise, as we have pointed out, there are a number of Proto-Chimu elements found on the Chavin stone. One more evidence of the influence of elaboration should not be ignored. That is the contrast between the staffs found in Proto-Nasca with those in Tiahuanaco II and, above all, in Chavin. The contrast needs no comments, save that here, again, the culmination of the process is found at Chavin.

Nor do we lack for signs of the presence of influences on the part of the principle of *Elimination*. As we have noted, the Proto-Chimu art shows full realistic representation of the whole of men and animals. Between Proto-Chimu and Proto-Nasca we find an elimination of most of the body parts by the latter art. In Tiahuanaco II, however, again probably on account of the influence of Tiahuanaco I, the habit of showing the body is revived, but some of the lines and curves of nature are markedly absent, both in Tiahuanaco II art proper and at Chavin.

Finally, the principle of *Substitution* is readily seen to have been at work. The eye-painting of Proto-Chimu and Proto-Nasca is substituted by the tears and tear-lines of Tiahuanaco II. The puma-head and ribbon-and-stone-ring tabs on the Weeping God's headdress at Tiahuanaco are replaced by the serpent-heads that occupy analogous places on the larger Chavin stone as well as on the lesser one. Again, the fish-like breast ornament of the Tiahuanaco figure finds a substitute at Chavin in the conventional

breast ornament of the figure on the larger stone. Once more the culmination of the process is at Chavin. Indeed, in the lesser Chavin stone one may see an excellent example of what MacCurdy describes as "transposition."²⁶ It is to be observed in the breaking up of the hitherto harmonious and comprehensible design into a chaotic *melée* of component parts and ill-assorted decorative motifs. One would be but reasonable in thinking the lesser Chavin stone to represent the art-stream, which we have watched so long, at its vanishing point.

Such, then, in very broad outline, is the general trend of the evidence afforded by a study of the application of the four great principles to Proto-Chimu, Proto-Nasca and Tiahuanaco II art.²⁷ We must now endeavor to interpret the evidence in terms of probable cultural migration. There is not space here to go into a detailed comparative analysis of the minor decorative motifs in Middle American and South American cultures, but the writer is convinced by careful study that the evidence of such an analysis would not differ from that afforded by the broader lines of modification.²⁸

To sum up the whole matter briefly, we find that a series of closely related arts is associated in turn with Chimu, Nasca, Tiahuanaco (mountains and coast) and Chavin. We find the art a little older step by step as we go from one of these regions

²⁶ MacCurdy, 1911, p. 127.

²⁷ One piece of pottery, reported on by Uhle (1913b, p. 363), almost constitutes in and of itself a proof of the blending or fusion of Proto-Nasca art into Tiahuanaco II art. The vessel in question is a shallow bowl from Tiahuanaco. On the broad rim is painted, in easily recognizable Proto-Nasca style, a serpent, the head of which is strikingly like the puma heads so often found in Tiahuanaco II art. The fact that the vessel comes from Tiahuanaco proves that Proto-Nasca art was carried thither, and the association of it with Tiahuanaco II art on the same vessel proves their close relationship.

²⁸ The reader's attention is here called to the art of Chiriquí. In many ways strikingly similar both in form and in content to the three early Peruvian arts, the art of Chiriquí is also similar to them in the matter of its development toward conventionalism from realism. It may well be that some day a close connection will be proved between the earliest (realistic) forms of Chiriquí art and the earliest (realistic) forms of Peruvian art. The reader is urged to consult the following works: MacCurdy, 1906, 1911, pp. 127 ff., 1913; Holmes, 1885, 1887; Joyce, 1916, pp. 144 ff.

to the next, a little older, that is, in point of development; the age in point of time from our own day decreases as we go up the series of sites. This does not mean, however, that one site was abandoned before the next began to flourish. In fact, the evidence proves that the first and last steps have much in common, and that they must have been at least partly contemporary. The opinion of the writer is that one should conceive of the slowly ageing art as the result of a slow spread of related peoples in several directions during a long time. While the spread was going on new sites were founded and new phases of the common art-ideal developed, but neither the old settlements nor the old phases of art were thereby at once robbed of vigor. What the political status of these people was we shall never know. We must remain content with what evidence we can wring from the vestiges of their culture.

4. A CRITICAL ANALYSIS OF THE EPIGONAL AND RED-WHITE-BLACK CULTURES.

So far, we have studied three cultures which we have just seen to be intimately linked together by lines of cultural descent. We have hitherto considered a cultural series that spread from the coast to the mountains. We have now come to a fork in that stream.

It is clear from the evidence presented by the architectural remains and by the artifacts that the three cultures so far considered were of a high order. What brought the last of them, the Tiahuanaco II culture, to a close we can but guess at this distant date. It is clear enough, however, that at the end of the Tiahuanaco II period something happened which checked the development of civilization in both mountains and coast. Vague whispers of the cataclysm persisted in the folklore of the country down to Spanish, and even into our own, times. The early chroniclers report the traditions of the event in various ways, none of which needs to be particularized here. In the nature of the case, the character of the catastrophe must have been gigantic in order to bring about the far-reaching results that it did. Whether it was a terrible earthquake, an invasion of savage peoples or some great epidemic of disease or a combination of these things we cannot tell. We only know that in

the Titicaca drainage the result was a sudden and very marked lowering of the culture-level, while on the coast and in other regions remote from Lake Titicaca the subsidence in culture, though noticeable, was not so marked. One more thing seems to be disclosed by known facts. As we have seen, Tiahuanaco II art spread far from Tiahuanaco itself. As we shall see, a decadent form of Tiahuanaco II art lingers on around the edges of the old Tiahuanaco "Empire." It is chiefly at Tiahuanaco itself and in the region between Lake Titicaca and Cuzco that the drop in culture is most noticeable. This would seem to indicate that the cataclysm, whatever it was, took place in the mountain regions. The divergence in culture-level that thus sprang up between the mountain regions and the coast resulted in a wide breach between the later arts of the two regions.²⁰

The cultures which we are to consider in this section are both coast cultures. The "Epigonal" art is mainly identified with the southern parts of the coast—Pachacamac, Nasca and Ica—where the influence of the Tiahuanaco II period had been strongest. Uhle is the scientist to whom the most credit for

²⁰ The author thinks that it is only fair to warn his reader here that the explanation offered to account for the marked lack of connection between Tiahuanaco II art and Inca art is open to a number of objections. In the first place, if Tiahuanaco II influence did spread into the Cuzco region, it must inevitably have left its stamp upon the art of that region. Archaeology does not permit us to deny that Tiahuanaco II art did spread to Cuzco,—and far beyond it. Why, then, is there so little of Tiahuanaco influence in Cuzco or Inca art? Why is there not at Cuzco, as at Titicaca, Koati and Tiahuanaco, an intermediate type of art which, though much lower in grade than Tiahuanaco II art, still preserves some vestiges of the old tradition? If the forces that brought the Tiahuanaco II art in the Titicaca drainage to an end were unable completely to obliterate the older style of that region, why were they so much stronger at Cuzco than at Tiahuanaco that they were able to wipe out completely the older art? An answer to these three questions, which were suggested by Dr. Roland B. Dixon, may perhaps be found in the study of the distribution in Peru of the type of culture represented by the Colla-Chulpa type. An examination of this distribution shows that Colla-Chulpa culture, or something very like it, is found throughout the Peruvian highlands from Bolivia to Cuelap in Chachapoyas. It is not like the coast cultures of the time (that is, the period just before the rise of the Incas). Place-names, it is true, have a character remotely suggestive of the coast, but this may have been the result of Inca *mitimaes* (transferred colonies).

the study of this period should be given, and the reader is urged to examine some of his Plates.⁸⁰ When we compare Tiahuanaco II art with "Epigonal" we at once see wherein the difference lies. The latter is but an unskillful and decadent attempt to continue the traditions of the former. Again and again it is possible to recognize portions of well-remembered Tiahuanaco II motifs on "Epigonal" artifacts, but always the latter are far inferior to their prototype in both line and color. So close is the resemblance sometimes that one would be tempted to say that the "Epigonal" things were indeed made in the Tiahuanaco II period, but by unskilled artists. This, however, is interdicted by the irrefutable stratigraphic evidence. The "Epigonal" wares and textiles occur in later strata than the Tiahuanaco II artifacts. The Weeping God, the puma-heads, the bird-figures and many other Tiahuanaco II motifs occur again in "Epigonal" art.

Closely associated with the "Epigonal" art is another art-type which, for want of a better name, we call red-white-black ware after the colors in which it is painted. This type is associated with the coast from Pachacamac northwards to Trujillo (Chimu) and even beyond; it occurs in the same strata with "Epigonal" at Pachacamac, which proves the approximate contemporaneity of the two. Our Plate XI, Figures 1 and 2, shows two excellent examples of this ware. The originals, in the Peabody Museum, Cambridge, Mass., came from Recuay, northern coast region. The colors are red, white and black. In Figure 1 we see a dragon-like figure that is very distinctive of this site. As Joyce points out,⁸¹ it is very similar to a motif found on some Proto-Chimu vases, and a crude derivative of it appears in northwestern Argentina. In the face that adorns the front of the vessel's neck we perceive a very strong tinge of Proto-Chimu tradition. The ear-plugs and headdress are both reminiscent of the analogous portions of the vase shown in Plate I, Figure 2. A great deal less skill in modelling is shown, however.

To sum up the features of the "Epigonal" and red-white-black arts, we may say that each flourished in the area in which the

⁸⁰ Uhle, 1903, Plates V and VI.

⁸¹ Joyce, 1912, p. 183.

previous culture from which it derived most of its characteristics had flourished. This explains why "Epigonal" art, which differs from Tiahuanaco II only in its imperfection, thrived in the region where Tiahuanaco II had been at its best, and why red-white-black art, similar in many respects to Proto-Chimu, existed in the same territory as the latter. On the whole, this period was one of stagnation. At any rate, nothing appears to have been done to advance the development of art in Peru.

Of what went on in the mountains during this period we know absolutely nothing. Perhaps the shock caused by the putative cataclysm had been so great as to result in a state of affairs almost verging on savagery. There is a possibility that it was at the beginning of this period that the very low-cultured Urus entered the Titicaca basin. They came from the south.²²

5. CRITICAL ANALYSIS OF THE CHIMU AND NASCA CULTURES.

As we have already noted, we know something definite in regard to the political, social and ethnological aspects of the people of this period. It will be our task in the present section to study their art, and in doing so we shall observe several close similarities between this coast-culture and the Proto-Chimu and Proto-Nasca cultures. We can but hope that the close artistic correspondence between the two is a token of social correspondence.

The distinctive ware of the Chimu period is the black ware that comes from the northern half of the coast and from various regions here and there in the highlands. Though the ware in question has a wide distribution, one may generalize by saying that it is especially distinctive of the northern half of the coast.

In Plate XI, Figures 3, 4, 5, and 6, are shown four very good specimens of the type. The originals are all in the Peabody Museum, Cambridge, Mass. Besides the fact that the vessels are made of black clay, another new and distinctive feature presents itself. This is the important part played by bas-relief in the decoration of the vessels. In every case, the technique

²² Chamberlain, 1910, pp. 417 ff.; Bandelier, 1910, pp. 36 ff.; Garcilasso, II, pp. 224 ff.; Balboa, 1840, Chap. XI; Boman, 1908, p. 71; Polo, 1901.

is the same square-edged variety that is to be noted in the bas-reliefs on the monolithic gateway. This similarity may or may not be significant. In the case of Figure 5 modelling in the round also plays an important part, and the human head with its large fan-shaped headdress recalls some of the figures of Proto-Chimu art. A further development of this headdress is seen on some of the specimens in the American Museum of Natural History. The development takes the form of the addition of great plume-like ornaments that rise in a curve from the headdress and fall down on both sides of the wearer's face. In decorations with this motif there is to be observed a very marked residue of the old Tiahuanaco II tendency toward bilateral symmetry, and also a number of other criteria typical of that period. For example, one vessel in the New York collection shows a personage with a perfectly symmetrical plumed helmet who is holding two staves or weapons in his symmetrically arranged four-digit hands. Indeed, four-digit hands are by no means uncommon in this period. It was a tendency inherited from the previous periods. A great many vessels however, like Figure 4, show no such symmetry and lack entirely any seeming resemblance to Tiahuanaco II art. Indeed, the anthropomorphic figure on that flask seems to be in the clutches of a creature more closely resembling the dragon-like animal we noticed in connection with the red-white-black ware than anything else. Again, there is a large class of black ware vessels like Figures 3 and 6 totally devoid of either anthropomorphic or zoomorphic decoration.

If skill in modelling is one of the strong points of Proto-Chimu art, it is so of Chimu art as well. Evidence of this is given by the large class of "portraits" in both black ware and in red ware. Above all, the modelled vessels representing peanuts, potatoes, *guanacates*, squash, *paltas*, and other vegetables and fruits are especially eloquent of the high artistic capabilities of the potters in the Chimu period. These vessels are adorned with modelled forms which, except in the matter of color, are absolutely true to nature.

All this does not mean to imply that the Chimu people used solely this black clay for their vessels. The black is emphasized merely because it is the most predominant and characteristic. Red clay painted in white slip was used, but it lacked the excel-

lence and the diversity, as well as some of the distinguishing motifs, of the Proto-Chimu pottery. As we have said, "portraits" continued to be produced in this period, and we find them in both black ware and red. It is often difficult definitely to assign a "portrait" to one or the other of the two possible periods.

Still other striking products of this period were the textiles and the stucco wall-decorations derived from them. In Plate XII, Figures 1 and 2, we see reproductions of textiles of this period. Brighter colored cloths with animal and human figures combined with conventional ones were also fairly common. There is, however, nothing especially new about them, and we would better take up the very remarkable architectural achievements of the period. Only by referring to Rivero and von Tschudi and to Squier can one get a really adequate view of the wonderful city of the Chimú kings.⁸³ Great walls thirty feet in height and ten feet thick at base by five feet thick near the top are distinguishing features of one type of ruins of the Chimú period. Another type does not have a tapering cross-section. Adobe is the usual material, of course, and it was one which lent itself admirably to the construction of a huge city of dwellings, canals, reservoirs, gardens and palaces. The interior surfaces of some of the walls are decorated with arabesques in stucco which arouse hearty admiration in the beholder. Squier gives numerous pictures of the various specimens of arabesque. We will content ourselves with noting three main classes of arabesque. The simplest type is that of the three specimens shown by Squier (1877, p. 154 f.), as consisting of lozenge-shaped depressions, or square ones, let into the surface of the wall in such a way as to form a lattice or checker-board pattern. In the same class, but a bit more elaborate, is the design which consists of a raised pattern in the form of a double line of stair-sign design.⁸⁴ The second type, while still largely geometric, is obviously derived directly from textiles of the type shown in Plate XII, Figure 1. The technique, as in the case of the simplest type, is of the square-edged variety.⁸⁵ It combines, like the textile-type with which it is related, a mingling

⁸³ Rivero y von Tschudi, 1851, pp. 268 ff.; Squier, 1877, pp. 135-192.

⁸⁴ Cf. Middendorf, 1894-95, II, pp. 375 ff.

⁸⁵ Squier, 1877, p. 137.

of geometric with zoomorphic elements. The third and final type might be described as curvilinear on account of the predominance of curved lines. In this type zoomorphic and anthropomorphic elements play a very important part. One decoration of this final type seems to be of a simpler nature than one other. It is made up of a series of large hollow squares in stucco relief. Below them are some extraordinary figures resembling conventionalized tapirs. These figures have their "probosces" down and their "legs" to the observer's right with their arched "backs" on the left. There are two of them under each square.⁸⁶ One is at a loss to explain this combination of motifs and likewise the motifs themselves. More comprehensible is the other specimen of this type. It is distinguished by a very rich composition (still in the square-edged technique) made up of conventionalized men, birds, fishes, crabs, lobsters and other such things. It is plainly the work of a people who were closely in contact with the sea. Two things are very interesting in connection with the human figures, namely, that they wear precisely the same headdress as the figures already described as occurring on the pottery of this period, and that, like those figures, they have less than the real number of digits. The crabs and lobsters in the design are almost life-like. Interwoven with these elements is another one which is like nothing else in Peruvian art. It is a curving device not unlike a W on which are shown some of the animals referred to. The reader is urged to turn to Plate XVI in Joyce (1912) for an adequate presentation of this remarkable design.

To sum up, then, our impressions of Chimu art, we will say that it bears a general and marked resemblance to the Proto-Chimu, both in the subject-matter and in the treatment. As is only natural, there are accretions from the intervening arts, new motifs and a new tendency to use dark-colored clay for vessels. Likewise, it is not difficult to see in the remarkable wall-decorations of this period an attempt to continue the tradition of richly carved ornament found to be so prominent in Tiahuanaco II art. The choice of material—stucco—is easy to explain on the ground that the coast people were already used to stucco as a wall-coating and that suitable stone for the purpose of carving into bas-reliefs was scarce on the coast.

⁸⁶ See Squier, 1877, p. 154.

Let us now turn to a brief examination of the same period further down the coast, designated by the name of Nasca. The reader is urged to consult Uhle, 1913b. The tradition of rich coloring noticed hitherto in the southern coast-region did not die out with the Tiahuanaco period. As we have already seen, the Epigonal period carried on the forms of Tiahuanaco art to the point where they were on the verge of falling to pieces as the direct result of too-long repetition. The last pre-Inca period of the southern coast exhibits an art which derives its color from both the Proto-Nasca and the Tiahuanaco periods and which still preserves a few of the motifs that mark the latter art. Look, for example, at Plate X, Figure 9 of Uhle, 1913b. On the vessel there shown the reader will notice a bird-figure which is considerably like the bird-figures in Tiahuanaco art or in Epigonal. All the other motifs on the vessel, however, are new, and they are distinctive of the period we are now studying. At the same time, the matter of pottery forms is an interesting one. Besides the more usual bowls and dishes, Nasca art shows a new pottery form, namely, the large globular vessel with a fairly wide flaring neck. In most cases, it should be noted, the body of the vessel has a slight tendency to be oval rather than spherical. In the Inca period this tendency becomes emphatic, in the Nasca region, as we shall see. The textiles of this period are practically all adorned with geometric designs. Our old friend the "stair-sign" is a motif that is often found. Color in the textiles becomes duller.

To sum up the period just before the Inca period on the coast in one sentence we may say that the northern half of the littoral preserved the old tendency toward modelled forms in pottery and toward animal forms in textile-designs, and, at the same time, that the southern half of the coast continued to make many-colored pottery although both the pottery and the textiles show a preponderance of geometric forms over life forms. In both parts of the coast it was essentially a period in which creative forces of the race's imagination were at a low ebb. This may be indicative of the state of affairs in other branches of human activity at that time. The old culture of Tiahuanaco had died away from some shock at the centre and the communities on the coast that had been dependent on it for artistic stimulation fell into a period of stagnation which was only brought to a close by the Inca invasion.

6. A CRITICAL ANALYSIS OF LATE INCA OR CUZCO ART.

In Inca art we come to the last phase of aboriginal art in Peru, Ecuador, Bolivia, Chile and Argentina. As the type from which all variants of the Inca types were derived was peculiar to Cuzco and its region, we will examine the art of that district before tracing its spread over the wide area it eventually covered. As we have noted before, the collection of pottery and other artifacts made by the various Yale Peruvian Expeditions in the Cuzco region is the most representative collection of Cuzco pottery now in this country. The articles by Dr. Bingham show excellently well the nature of the site in which most of these things were found.³⁷ Important also for our purposes, is the recent publication by Dr. Eaton.³⁸ The evidence presented by him proves conclusively that most of the burials at Machu Picchu are relatively recent, probably dating not farther back than sixty or eighty years before the Conquest. Since this is so, we must assume that the artifacts from there are also recent. None have been found that are pre-Inca.

Besides the Yale collection, that in Berlin and that of Dr. Caparo Muñiz at Cuzco are the best two.³⁹ It will be well to note that the late Inca period which we are now to discuss includes the reigns of the last three unmolested Incas: Pachacutec, Tupac Yupanqui and Huayna Capac. The period began, probably, somewhat after 1400. When Inca Pachacutec assumed the red fringe of sovereignty the Inca dominion already included most of the territory between Chincha and Huánuco on the north and Arica and Tucuman on the south. It was extended by Pachacutec and his successors so as to include all the territory between the northern part of the modern Ecuádor and the River Maule in Chile and between the ocean and the montaña or forest-region. In the last days just before the Spanish conquest, when the ill-fated Atahualpa was Inca, Quito, Cajamarca, Cuzco and the island of Titicaca were the chief centres of importance. Cuzco still remained the capital.⁴⁰

³⁷ Bingham, 1913, 1915, 1915b, 1916.

³⁸ Eaton, 1916.

³⁹ Seler, 1893.

⁴⁰ Cf. Means, 1917; Pedro Sancho, 1840.

We will first discuss the matter of forms in Cuzco (i. e. Inca) pottery before taking up that of decorative motifs. First comes the stately aryballus, at once the most typical Cuzco form and the most universally adopted one wherever Inca power penetrated. Our Plate XIII shows two good examples of this type. There are several sub-types of aryballi. A tentative classification is to be offered later. Next in order of frequency of occurrence come the beaker type, shown in Plate XV, Figure 2, the pelike type, Plate XIV, Figure 1, the bowl, dish and numerous other forms.

In the matter of decoration we find that the geometric figures are in a large majority over anthropomorphic or zoomorphic ones. At the same time, modelled ornament, save for the universal cat's-head nubbin, is found to be essentially foreign to Inca pottery. It does occur, of course, but it is an extraneous element. (Plate XIV, Figure 3; Plate XV, Figures 3 and 4.) By far the greater part of Inca pottery decorations are made up of combinations of a comparatively small number of motifs. We will describe several of these. One of the most widespread is that seen in Plate XIII, Figure 1. An old Indian at Cuzco told the writer that the design represented a conventionalized *quipu* or knot-record and that the design was applied particularly to the vessels of the *quipucamayoc* who looked after the *quipus*. Without accepting this as an absolute fact, we will call this design the "quipu-motif." Another frequently seen motif is the meander (Plate XIII, Figure 2). A third is the lines-and-cross motif (Plate XIV, Figure 1). A fourth we will call the "diamond motif" (Plate XIV, Figure 3). A fifth might be described as the "saw-tooth motif" (Plate XIV, Figure 3). There are numerous other motifs that might be enumerated if space permitted, but the five named are the commonest and one rarely finds a vessel of Inca type that has not at least one of them upon it. In regard to color the Inca or Cuzco type is rather sombre. Black, dark brown, light brown, red and some white are the usual tints.

Cuzco types tend to vary but little from the original model. Nevertheless, local variations do occur in several regions, and in the Inca pottery at Cuzco itself marked influences from the arts of subjugated peoples are to be seen. We shall take up

in turn our consideration of these departures from the usual type.

It may be said that the Inca dominion spread first south then north. The Inca artifacts found in northern sites are, on that account, likely to be more recent than those found in the southern sites. In Argentina and Chile Inca vessels are frequently met with. Boman (1908, I, Plate X) shows two aryballi from Lapaya in north-western Argentina. The shape of the vessels and the arrangement of handles and nubbins are exactly the same as in vessels from Cuzco or Machu Picchu. The pattern on the better of the two pots is divided into two motifs which are the "diamond motif" in two forms, and a debased form of the "saw-tooth motif." Boman's Plates XI and XIV (vol. I) show other Cuzco-type vessels from Lapaya which do not call for special mention. His Plate XVIII (vol. I) shows two aryballi from the Argentine site of Lerma. One shows the "saw-tooth motif" and the "diamond motif." The other combines a perfect Cuzco shape with a well-modelled snake whose head is near the neck of the vessel and slightly raised as if to strike. In general, then, these designs, though obviously derived directly from Cuzco prototypes and totally unrelated to any other Peruvian art, are marred in some cases by a crudeness and uncertainty of execution that may, perhaps, be attributed to a lack of skill on the part of local makers. An examination of Cuzco pottery from Chilean sites reveals a similar situation. Oyarzún (1910, p. 363 ff.) shows six Inca or Cuzco aryballi from places in northern Chile. In three cases both shape and decoration are of the best Cuzco style, but in the other three the designs, though derived directly from Inca ones, are crude in point of execution. Turning our attention to Ecuadorian sites we find that the state of affairs is much the same as in the far south of the Inca dominion. Dorsey (1901, Plate XLII) shows a fine Inca aryballus from the island of La Plata in the Bay of Guayaquil. It is exactly of the same shape as the Cuzco or Machu Picchu vessels and it is adorned with the "quipu motif." Bamps (1879, Plates II, III, and IV) shows many Inca vessels from points further north and east in Ecuador. Again, both in shape and in the execution of the designs, these vessels could not be told apart from similar ones from Cuzco or Machu Picchu. So far as archaeological

work has thus far shown, the potters of the north were more successful in their attempts to copy the Cuzco style than were those of the south. We should bear in mind, however, the likelihood that cruder specimens of vessels of the Inca type have not been reported on. A vessel from Ibarra, Ecuador, is noteworthy in this connection. It is shown by Seler (1893, Plate 48, Figure 20). It is an aryballus, but the graceful shape of the prototype is not preserved in this copy; the flowing line that, in the Cuzco vessels, merges the neck with the body is here broken by a pronounced shoulder. The decoration, however, combines the "quipu motif" with the "diamond motif."

It may seem odd at first that the widest divergences from the Cuzco standard do not occur in the regions furthest from Cuzco. Pachacamac and Ica are the two sites which show the most strongly localized arts. The reader is urged to consult Uhle's publications on this point.⁴¹ In the period that preceded the Inca period at Pachacamac, as we have seen, the people made a great number of black clay vessels with one-handled globular bodies and necks adorned with rather coarsely modelled human faces. The combination of this art with Inca vessels of the aryballus type resulted at Pachacamac in giving two handles to the vessels and in adding paint to the modelled face. We should not fail to note that in many cases where the hands appear in the Inca vessels they have five fingers. This emphasizes the breaking away from the old Tiahuanaco tradition. At Ica, as we have previously observed, large vessels of a slightly oval shape were made in the last pre-Inca period. These develop into a definitely egg-shaped or cask-shaped type decorated sometimes with Inca motifs and sometimes with Nasca motifs.

This brings us to the consideration of the other type of variation from the Cuzco standard. It is the class of variation which consists in a manifestation of the influence of local pre-Inca arts on the Cuzco type. The reader has just seen the effect that Inca art had upon the modelled black ware of the coast. He is now asked to turn his attention to its corollary, the type which shows the influence of the black ware of the coast upon the Cuzco types. In Plate XV, Figure 4, we have an excellent specimen of this class. Though both come from Machu Picchu, Figure 3 may

⁴¹ Uhle, 1903, Plates VIII and XIII, 1913b, Plate X.

well be the coast-form which served as a model for the other. In both examples there is but one handle, and the general shape is the same in both. Figure 4, however, is definitely associated with Inca art by the "quipu motif" on its body.

We will now draw up a classification of Inca pottery on a basis of form and decoration:

- Type I Large open-necked vessels (often painted with geometric designs).
 - a Deep bowls without handles (Seler, 1893, Plate I).
 - b Various types with handles gradually approaching aryballus.
- Type II Aryballus type. Narrow neck, two handles and nubbin.
 - a With geometric designs only.
 - b With painted designs both geometric and animal.
 - c With modelled anthropomorphic element and painted design in combination.
 - d Miscellaneous sub-types.
- Type III Plates, bowls, braziers, cups, etc.
 - a With geometric designs.
 - b With animal or human designs.
 - c With both.
- Type IV Miscellaneous beakers, bottles and pots.

We must now turn our attention to the question of Inca or Cuzco textiles. To the modern eye they appear the most beautiful of all Peruvian textiles. As we shall see, however, they are not technically so wonderful as the Proto-Nasca embroideries. Plates XVI and XVII show four typical Inca textiles. A glance will show the reader that those on Plate XVI are of a very different type from the other two. They come from the island of Titicaca, and the originals are in the American Museum of Natural History, New York. In Plate XVI it is seen that the decorative tendency is to break the surface up into small patches of color. This same tendency may be remarked on Inca pottery from the same site. The number of decorative motifs is too great to dwell upon at length; we shall have to content ourselves with noting that the motif which consists in a slanting band ended off by two squares each containing a dot, which squares are repeated on each side of the band, occurs on an Inca cloth

from Ica.⁴² Variants of the "saw-tooth motif" and of the "diamond motif" are present in each of these ponchos, recalling the Inca pottery. Both also show the frequent use of rectilinear spirals. Plate XVII, Figure 1, is also a poncho from the island of Titicaca. It is in several shades of red and has a white cruciform figure much like that on the cask-shaped vessel from Ica shown by Uhle (1913b, Plate X, A). Figure 2 comes from the coast and shows a slight influence, in the form of cat-like figures, from the Chimú period.

We must now summarize our impressions of Inca art. We may do so by saying that geometric decoration has a great preponderance over animal or human motifs. While Inca pottery derives most of its charm from its graceful form, it is by no means to be despised because it has not a great range of color. The designs are usually simple but pleasing, and in most cases they are peculiar to Inca art. In the textiles the same tendency toward geometric designs is to be noted, although here again other elements do occasionally play a part. In general, the color of the textiles is brighter and more various than that of the pottery.

⁴² Uhle, 1913b, p. 344.

IV. THE QUESTION OF CHRONOLOGY AND DATES IN EARLY PERUVIAN ART

As was said at the beginning of the paper, the writer, after surveying the development of art in ancient Peru, wishes to present a date-chronology of the various cultures. The dates here to be presented are only approximate. In the nature of things, we must be prepared to allow for an error of a century or more in the remoter epochs.

It is necessary that a word should be said as to the methods employed in drawing up the chronology. In the total lack of all written records of any sort we have to meet a great obstacle. This is partly overcome by certain things which we will speak of soon. Moreover, tradition, which sometimes does much to aid in the establishment of an approximate chronology, is here limited almost wholly to the Inca period. These are the chief disadvantages to be met with. We will now examine the conditions which are more favorable to our end.

In trying to construct a date-chronology for the various higher cultures of the Andean region, one must bear in mind that it is inherently improbable that the cultures of South America possess an antiquity greater than those of Middle America. The researches of Dr. Hrdlička have clearly shown this improbability. He has shown four very important truths: (1) Man is zoologically a newcomer in this hemisphere; (2) Man, when he arrived on this continent, was in a stage of culture "superior to that of the late Pleistocene"; (3) Man, since arriving in this hemisphere, has inevitably undergone certain secondary modifications as to physical type and culture; (4) There exists to-day in north-eastern Asia a racial element that is descended from the same ancestors as the American Indians.¹

Since, from the point of view of the zoologist, Man is an Old World animal that reached America by way of Siberia and the Aleutian Islands, it must be assumed that the northern parts of the continent were peopled sooner than the southern parts. This supposition applies to any tribes, no matter what their cultural grade may be. Nor is mythology lacking in indications of the

¹ Cf. Hrdlička, 1912, 1912b, 1912c, 1912d.

southwardly shift of the high-cultured people of the west coast of South America. In the face of all this, then, the *onus probandi* rests upon him who would maintain that the South American populations are older than the North American or Middle American.²

Let us, then, assume for the purposes of the present discussion that Man entered America from the north and slowly spread southward. The primary migrations of Man in America have a southward trend. His secondary migrations often do not. In the Middle American region (Mexico, Yucatan, Guatemala, Honduras, Salvador, Nicaragua, Costa Rica and Panama) we have a number of very high cultures. Those of Mexico and Yucatan are, in many respects, as high or higher than those we have been studying. Up to about 752 A. D. all is vague and uncertain as to cultural events in Mexico. In or about that year, however, the Toltecs founded Tula.³ More important for us is the cultural type described by Tozzer as "archaic." It is much older than the Toltec culture and much more widespread. Indeed, we may say that the archaic type occurs scatteringly from the valley of Mexico down to Panama.⁴ It will perhaps be proved to be the ancestor of most of the later high cultures of Middle and South America. At any rate, the meager seven centuries from the founding of Tula to the Spanish conquest is obviously not long enough to account for the development and wide distribution of the calendar-system and the various related dialects in Middle America. We must assume that the people of the archaic period flourished long before the time when the earliest high cultures of Middle America began to develop their own peculiarities, peculiarities which, however, never succeeded in blotting out the fact that all the cultures had a common origin.⁵

² This is not the place to go into the question of geologically ancient man in America. Those who wish to do so are urged to read Hrdlička, 1912, and the numerous works listed in the Bibliography of that publication. All that it is necessary to say here is that Hrdlička has shown the extreme unlikelihood of the existence of any of the morphologically primitive types of men in America.

³ Tozzer, 1916, p. 464.

⁴ Tozzer, 1916, p. 466; Spinden, 1915; see Appendix for discussion of "archaic type."

⁵ Means, 1917.

In Yucatan we can fairly carry the beginning of protohistory back many centuries. This is largely due to the work of Mr. Bowditch and to that of Mr. Morley.⁶ As the present writer has explained elsewhere, the difference between the chronologies of these two authors is neither serious nor great. The earliest dated Maya remains are, respectively, the Tuxtla statuette and the Leyden plate. The former bears the Maya date 8.6.2.4.17 (about 100 B. C.); the date on the latter is 8.14.3.1.12 (about 40 A. D.).⁷ In spite of the fact that these inscriptions are so early, the system in which the dates are set down is absolutely the same as that in which those of the "Old Empire" cities in southern Yucatan are written. The significance of this is, of course, that even so early as 100 B. C. the Mayas had gone through the centuries-long process of evolving their calendar system. We must postulate, in Mr. Morley's opinion, at least a thousand years of preparatory development.⁸ This period of development should be understood to include the migrations of the various branches of the original stock to the place in which they are found in later eras. From about the time of Christ to the end of the seventh century the "Old Empire" of the Mayas was running its course. From then to the middle of the fifteenth century the "Transitional Period" and "New Empire" rose and fell.

We will now summarize the chronological conditions known to be true of Middle America. For at least eleven centuries before Christ various migrations (mainly southward) were accompanied by the steady development of individual cultures, all variants of a common origin, albeit influenced by environmental and psychological conditions. By the time of Christ, the high cultures of Middle America had almost crystallized into their final forms.

⁶ Bowditch, 1901; Morley, 1910, 1915; Means, 1917b, p. 3.

⁷ While on his most recent expedition for the Carnegie Institution of Washington, Mr. Morley discovered an important site in northern Guatemala. He gave it the name of Uaxactun—Eight-stone—because he found there a large stela bearing the Maya date, 8.14.10.13.15, equal to about 50 A. D. Another inscription at that site may possibly be eighth cycle, also. We have, consequently, at least three inscriptions dating from 50 A. D. or earlier. (Information given by Mr. Morley to the writer.)

⁸ Morley, 1915, p. 194-196; Holmes, 1916.

In South America, what do we find? We find a series of cultures following one another in logical succession. We find that the earliest are the most like the Middle American cultures. We find, besides, two independent criteria which enable us to build up an approximate chronology. Each will be described in turn.

The list of "kings" of Peru given by Fernando Montesinos on the authority of Blas Valera has only lately begun to receive the attention it merits.⁹ While it emphatically cannot be accepted as real history, it is, nevertheless, important as indicating that popular legend in the time of the Incas preserved the memory of many generations of rulers. Counting the Incas, the "kings" on the list number 102. Markham, an accomplished historian in other fields as well as in the Peruvian, considers that 27 years is a fair average for the length of a reign. Accepting this in its totality for the nonce, we find that the list of rulers is thought by Montesinos to cover a period of 2,754 years, or, in other words, that the first ruler flourished about 1224 B. C. (1530 A. D. minus 2,754). This date, then, is the very earliest that even Montesinos is willing to accept. Everyone will agree that this date is hardly tenable. As Markham says (1912, p. 41), we must allow for repetitions, overlappings and other errors. Let us, then, be conservative and consider that there were but seventy reigns. This gives us about 1,900 years as the period covered by the list, and it puts the earliest ruler about 350 B. C. Sir Clements Markham (*loc. cit.*) prefers the initial date 200 B. C. We may say, then, that in all probability, the earliest "king" of Tiahuanaco I (it was of the mountain races that Montesinos wrote) flourished about 200 B. C. Probably, however, culture was low and local for many generations. We find that the "first dynasty" of Montesinos is frequently marked by the name Pirua. It consists of eighteen rulers. Let us call it fifteen; $15 \times 27 = 405$ years; or, in other words, the Pirua "dynasty" came to a close about 200 A. D. Was not this perhaps the end of the Tiahuanaco I period? The next "dynasty" is marked by the name Amauta in many cases. Montesinos gives it forty-five rulers. Let us call it thirty; $30 \times 27 = 810$; this brings us

⁹ Montesinos, 1840, 1882; Markham, 1912, p. 303 ff.

up to about 1000 A. D. This date, however, does not fit well with known historical facts. Let us, then, say that the Amauta "dynasty" (perhaps of Tiahuanaco II) flourished from about 200-900 A. D. Montesinos calls the dark period that followed the Amauta "dynasty" the "Tampu Tocco period." In it we may see our Colla-Chulpa period. He gives it twenty-seven rulers. Let us call it ten; $10 \times 27 = 270$ years; or, to put it differently, the dark period began to draw to a close about 1170 A. D. This brings us to the threshold of the Inca period. The late Dr. Gonzalez de la Rosa constructed a date-chronology of the Inca period which seems to the writer wholly acceptable. A modified version of it is given here.¹⁰

REIGNS OF THE INCAS, ACCORDING TO
DR. GONZALEZ DE LA ROSA.

Sinchi Rocca	1134-1197
Lloque Yupanqui	1197-1246
Mayta Capac	1246-1276
Capac Yupanqui	1276-1321
Inca Rocca	1321-1348
Yahuar Huaccac	1348-1370
Viracocha	1370-1425
Pachacutec	1425-1478
Tupac Yupanqui	1478-1488
Huayna Capac	1488-1525

It may be more satisfactory to some to reduce the thing to round numbers, thus: Viracocha, 1370-1420; Pachacutec, 1420-1480; Tupac Yupanqui, 1480-1490; Huayna Capac, 1490-1525. Either step will result in a fairly accurate basis on which to fix one's idea of the reign-periods.

So much, then, for one of our two criteria. It has been noted that this one concerns the mountain region primarily. The other is important for the coast cultures. It is unfortunate that it has not yet been fully studied.

The islands off the coast of Peru have long been famous for their deposits of *guano*. These lie in masses of enormous thickness. Markham says that two and one-half feet a century is approximately the rate of accumulation. The rate no doubt fluctuated slightly, but the careful investigations made by Mark-

¹⁰ Gonzalez de la Rosa, 1909; Means, 1917, p. 244.

ham have led him to accept the above rate as a fair average. According to Gonzalez de la Rosa, antiquities occur in the guano at depths varying from nine feet to forty or more.¹¹ This means that in 1870 (at which date the investigations were made) the antiquities presumably varied in age from about four centuries (i. e. 9 feet gives a date of about 1450) to about sixteen centuries (i. e. 40 feet gives a date roughly equal to 200 A. D.). Perhaps future work will yield more detailed information as to which cultures are found at various depths in the guano. At all events, it seems possible that for want of a better criterion we must bear the evidence of the guano deposits in mind.

It is now well for us to summarize and tabulate the general results of the evidence brought out by the foregoing discussion. Once again the reader is asked to remember that the dates here offered claim to be no more than roughly approximate guides to the imagination.

AN APPROXIMATE CHRONOLOGY OF THE EARLY CULTURES
OF PERU.¹²

<i>Mountain Regions</i>	<i>Coast Regions</i>	<i>Dates</i>
Primary Migrations	Primary	
Tiahuanaco I	Migrations and Proto-Chimu and Proto-Nasca	? -200 A. D.
.....
Tiahuanaco II	Coast Tiahuanaco II, followed by "Epigonal" and red-white-black wares	200-900
.....
Colla-Chulpa period (called "Tampu Tocco" by Montesinos)	Continuance of above styles	900-1100
.....
Early Inca	Chimu and Nasca	1100-1400
.....
Late Inca dominion approaching its zenith		1400-1530

¹¹ Gonzalez de la Rosa, 1908.

¹² The reader is particularly reminded that there is much evidence to show that Proto-Chimu, Proto-Nasca and Tiahuanaco I all contributed

This brings us to the end of our subject. When, in 1531, the Spanish conquest of Peru began, the Inca dominion—Ttahuantinsuyu—was being torn to pieces by a civil war between the legitimate ruler, Huascar and the usurper Atahualpa. Subsequent evolution in Peruvian Art lies beyond the scope of the present work.

towards the formation of Tiahuanaco II. Moreover, as Tiahuanaco II art grew older it became more and more complex, spreading, at the same time, into regions very far away from Tiahuanaco itself. The fact that the specimens of Tiahuanaco II art from the more distant regions often show the admixture of elements taken over directly and bodily from Proto-Chimu and Proto-Nasca art, shows that, even when Tiahuanaco II was approaching its end, the two early coast arts were still vigorous. The dates on the above table, therefore, should not be regarded as the *terminal* dates of the culture periods, but as the *approximate* dates at which each was at its strongest development.

APPENDIX I: THE ARCHAIC TYPE.

Dr. Herbert J. Spinden kindly wrote at the writer's request this summary of his views as to the significance of the "archaic type."

"An archaic culture allied to that of Mexico and Central America seems once to have spread across Colombia and Ecuador to the coast of Peru. In Peru the culture has not been isolated in pure form—if we may use this chemical phrase in archaeology—unless it should prove to be that which Uhle briefly describes from the earliest shell-heap remains at Ancon. He figures several heads that resemble very closely those of the lowermost horizon in Mexico and he finds associated with them pottery characterized by incised and plastic decoration.¹ It need hardly be pointed out that the pottery of the Archaic horizon in the north is also characterized by plastic decoration and that when incised or painted decorations occur the designs are exceedingly simple. Highly "conventional" designs based upon an animal motive are not found in the truly archaic, but are characteristic of the second crop of cultures after religion and ceremony had developed to the point that it could react strongly upon art.

"But in the absence of other data we may be permitted to rest our theory upon the presence in the coastal region of Peru of figurines presumably related to those of the Archaic horizon although found among the products of a later time. At Ancon, and at other sites as well, are found nude female figurines with the short stubby arms that are so characteristic of the products of the Archaic horizon from Mexico to Colombia. These figurines are usually moulded rather than modeled and it seems unlikely that moulds came into use until the upper archaic or even later. The standing pose is more common than the sitting one. In the American Museum collections there are perhaps twenty-five examples of these figurines, and others are reproduced by Putnam.²

¹ Uhle, 1912, pp. 22-45.

² Putnam, 1914, Plate XIX.

"In addition to female figurines there are many examples of pottery vessels from Ancon, Trujillo, etc., in which a human figure is represented in a fashion that harks back to the archaic, namely with the elbows and knees both flexed and the former directly over the latter. Of course, in the cases of both the figurines and the vessels the qualities peculiar to Peruvian art had already become set.

"The theoretical considerations that connect the spread of archaic ceramic art with the spread of agriculture are very strong. No one can get away from the fact that maize, beans and squashes constitute four species (*Zea mays*, *Phaseolus vulgaris*, *Cucurbita maxima*, and *C. pepo*) wherever agriculture is found in America. The Lima bean (*Phaseolus lunatus*) had a more restricted use.

"It seems not unreasonable to suppose that careful research will bring to light more evidence on the occurrence of figurines of early type. These objects may have been neglected in favor of those of greater artistic interest. For instance, Dorsey, in discussing the finds on the Island of La Plata, says:—

" 'Practically all this pottery was in fragments, only two pieces were found in perfect condition. With the exception of not more than a dozen pieces, all the fragments were parts of small images in the form of human figures. . . . From fragments representing perhaps a thousand images not more than half a dozen pieces were found which bore any trace of paint. . . . All the pottery, with a very few exceptions, is hand made; that is, it was not made in a mould, which was commonly employed on the mainland of Ecuador and throughout a large extent of Peru.'³

"Many of the fragments figured by Dorsey are distinctly archaic in treatment. Of course it might be argued that the archaism is absolute rather than relative but a comparison of special features gives ample evidence of transitions from one region to the next."

To these remarks by Dr. Spinden the writer would like to add a few of his own.

As has been said, the "archaic type" is stratigraphically the earliest in Middle America. Therefore, if it does occur in South

³ Dorsey, G. A., 1901, pp. 266-267.

America it must be expected to be the earliest there also. If one is to believe that the "archaic type" was a very early type which spread all over the northern half of Latin America, must not one also assume that the various later cultures were developed from it in the several regions involved? Such a development would occur after religion and ceremony had gained considerably in strength, as Dr. Spinden says. On the other hand, if the "archaic type" is looked upon as a cultural landmark rather than as a culture in itself, the finding of it in the wide area mentioned does not prove much. In other words, if we are to believe that all art at some time or other passes through a stage wherein it shows "archaic type" characters, the mere fact that art with archaic characters is found in both Middle America and South America does not mean much. The writer, however, finds that the former interpretation is the better. There can be but little doubt as to the absolute priority in point of time of the archaic culture of the Peruvian shell-heaps. The work of Uhle has shown that in Peru, as in Middle America, the earliest culture of all was the archaic type, and we now know that this type was uniform throughout Middle America and on the Peruvian coast. It is the foundation whereon all other cultures were built.

APPENDIX II.

A TABLE TO SHOW ROUGHLY THE CHRONOLOGICAL ORDER OF THE EARLY PERUVIAN CULTURE PERIODS.

NAMES.	AREAS.	REMARKS.
Proto-Chimu.	The coast from Tumbes to Ancon.	Characterized by realism and light tonality.
Proto-Nasca.	The coast from Pachacamac to Arica.	Distinguished by conventionalization and rich coloring.
Tiahuanaco I.	In the mountains, from Samaipata to Cuzco, and especially about Lake Titicaca.	A culture rich in architectural remains. Endowed with a stone technique. Not like P-C or P-N, possibly Arakan.
Tiahuanaco II.	In mountains and on coast, from Colombia to Argentina and Chile.	Probably a complex of the three foregoing cultures.
"Epigonal" and Red-white-black.	On the Peruvian coast.	Decadent forms of Tiahuanaco II culture.
Chimu and Nasca.	On the Peruvian coast.	Revival of some of the features of Proto-Chimu and Proto-Nasca.
Colla-Chulpa.	Around Lake Titicaca.	Low culture with faint traces of Tiahuanaco II influence.
Early Inca.	Cuzco region.	Beginning of new period in the mountains.
Inca "Empire."	From Ancasmayo in Ecuador to Maule in Chile.	The last pre-Columbian culture. Graceful forms, restrained coloring.

..... Separates contemporaneous cultures.

— — — Separates partly contemporaneous cultures.

———— Separates non-contemporaneous cultures.

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ABBREVIATIONS

AA	American Anthropologist.
AASP	American Antiquarian Society Proceedings.
AJA	American Journal of Archaeology.
AJS	American Journal of Science.
AMJ	American Museum Journal.
APAMNH	Anthropological Papers American Museum of Natural History.
BAE	Bureau of American Ethnology.
BGA	Berliner Gesellschaft für Anthropologie.
BSGL	Boletín de la Sociedad Geográfica de Lima.
BSGLP	Boletín de la Sociedad Geográfica de La Paz.
CAAS	Connecticut Academy of Arts and Sciences.
CIA	Congrès internationale des améicanistes. (See also, ICA.)
CIAAP	Congrès internationale d'anthropolgie et d'archéologie pré-historiques.
FCMP	Field Columbian Museum Publications.
FFLSA	Facultad de Filosofía y Letras, Sección Antropológica (Buenos Aires).
HS	Hakluyt Society.
ICA	International Congress of Americanists. (See also, CIA.)
JAP	Journal de la Société des Américanistes de Paris.
JRGS	Journal of the Royal Geographical Society.
MFAB	Museum of Fine Arts Bulletin (Boston).
NAMS	Nouvelles Archives des Missions Scientifiques.
NGM	National Geographic Magazine.
PAAAS	Proceedings of the American Academy of Arts and Sciences.
RBAE	Report of the Bureau of American Ethnology.
RH	Revista Histórica (Lima).
SMP	Smithsonian Miscellaneous Publications.
TCCC	Trabajo del Cuarto Congreso Científico.
ZE	Zeitschrift für Ethnologie.

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- Fig. 1. A Proto-Chimu vessel showing two hunting-scenes, one modelled and one painted in dark brown on a cream-colored slip.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.
- Fig. 2. A Proto-Chimu vessel with a modelled scene representing some ceremony, and an engraved landscape.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.
- Fig. 3. A somewhat grotesque Proto-Chimu vessel of the portrait type. Note the fangs and the feather-like headdress.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.
- Fig. 4. A portrait, probably belonging to the Proto-Chimu culture.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.
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Courtesy of the Peabody Museum, Cambridge, Massachusetts.

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Courtesy of the American Museum of Natural History, New York City.
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Courtesy of the Peabody Museum, Cambridge, Massachusetts.

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Courtesy of the Peabody Museum, Cambridge, Massachusetts.
- Fig. 4. A Proto-Nasca vessel with two narrow spouts.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.
- Fig. 5. A Proto-Nasca vessel decorated with the Multiple-headed God motif. Note the four digit-hands.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.
- Fig. 6. A semi-realistic modelled vessel, of the Proto-Nasca culture.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

PLATE III.

- Fig. 1. A Proto-Nasca vessel. Note the headdress, the mouth-mask, the ribbon-and-ring decorations, and the conventionalized spear-thrower.
Courtesy of the American Museum of Natural History, New York City.
- Fig. 2. A Proto-Nasca vessel with a variant of the Centipede God motif. Note the four-digit hands and the protruding tongue.
Courtesy of the American Museum of Natural History, New York City.
- Fig. 3. A Proto-Nasca vessel. Note the feather-like mouth-mask, the ribbon-and-ring decorations, and the bilateral symmetry of the design.
Courtesy of the American Museum of Natural History, New York City.

PLATE IV.

- Fig. 1. An embroidered Proto-Nasca textile. Note the head-dress, mouth-mask, and the four digit-hands.

Courtesy of the Museum of Fine Arts, Boston, Massachusetts.

- Fig. 2. A Proto-Nasca vessel decorated with a variant of the Centipede God motif and with a painted human face. Note the four-digit hands, the protruding tongue and the "tears."

Courtesy of the American Museum of Natural History, New York City.

- Fig. 3. A Proto-Nasca textile. Note the headdress, the mouth-mask, the four-digit hand, and the elaborately decorated protruding tongue.

Courtesy of the American Museum of Natural History, New York City.

PLATE V.

A richly embroidered Proto-Nasca textile. The design combines elements from the Centipede God motif with elements from the Multiple-headed God motif.

Courtesy of Dr. Denman Waldo Ross and of the Museum of Fine Arts, Boston, Massachusetts.

PLATE VI.

A large and beautiful embroidered Proto-Nasca garment. Made entirely of wool.

Courtesy of Dr. Denman Waldo Ross and of the Museum of Fine Arts, Boston, Massachusetts.

PLATE VII.

The Weeping God on the monolithic gateway at Tiahuanaco.

Photograph by courtesy of the Peabody Museum, Cambridge, Massachusetts.

PLATE VIII.

- Fig. 1. A finely woven garment, probably of the Tiahuanaco II culture.

Courtesy of the American Museum of Natural History,
New York City.

- Fig. 2. A garment from the coast of Peru, probably of the
Tiahuanaco II culture.
Courtesy of Dr. Denman Waldo Ross and of the
Museum of Fine Arts, Boston, Massachusetts.

PLATE IX.

The Greater Chavin Stone.
Photograph by courtesy of the Peabody Museum, Cam-
bridge, Massachusetts.

PLATE X.

Two textiles, either late Tiahuanaco II or Epigonal.
Note the results of long-continued conventionalization
and elaboration.
Courtesy of the American Museum of Natural History,
New York City.

PLATE XI.

- Fig. 1. A Red-white-black ware vase. Note the headdress, the
modelled face and the painted animal-figure.
Courtesy of the Peabody Museum, Cambridge, Massa-
chusetts.
- Fig. 2. A Red-white-black ware vessel in the form of a cat-like
animal.
Courtesy of the Peabody Museum, Cambridge, Massa-
chusetts.
- Fig. 3. A Black-ware vessel, Chimu culture.
Courtesy of the Peabody Museum, Cambridge, Massa-
chusetts.
- Fig. 4. A Black-ware flask, Chimu culture.
Courtesy of the Peabody Museum, Cambridge, Massa-
chusetts.
- Fig. 5. A Black-ware vessel, Chimu culture.
Courtesy of the Peabody Museum, Cambridge, Massa-
chusetts.

- Fig. 6. A Black-ware flask, Chimu culture.
Courtesy of the Peabody Museum, Cambridge, Massachusetts.

PLATE XII.

- Fig. 1. A Chimu textile. Note the combination of geometric decoration with greatly conventionalized animal-heads or bird-heads.
Courtesy of the American Museum of Natural History, New York City.
- Fig. 2. A very fine pouch, Chimu culture.
Courtesy of the American Museum of Natural History, New York City.

PLATE XIII.

- Fig. 1. An Inca or Cuzco aryballus of exquisite shape, decorated with quipu motif.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.
- Fig. 2. An Inca or Cuzco aryballus, decorated with rectilinear meander.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.

PLATE XIV.

- Fig. 1. An Inca or Cuzco pelike, decorated with lines-and-cross motif.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.
- Fig. 2. A deep bowl with handles, Inca or Cuzco type.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.
- Fig. 3. A shallow dish, decorated with saw-tooth motif and with diamond-motif. Note the handle in the form of a human head. Inca or Cuzco type with influence from the art of the coast.
Yale Collection; courtesy of the Connecticut Academy of Arts and Sciences.

- Fig. 4. A shallow dish, Inca or Cuzco type.
Yale Collection; courtesy of the Connecticut Academy
of Arts and Sciences.

PLATE XV.

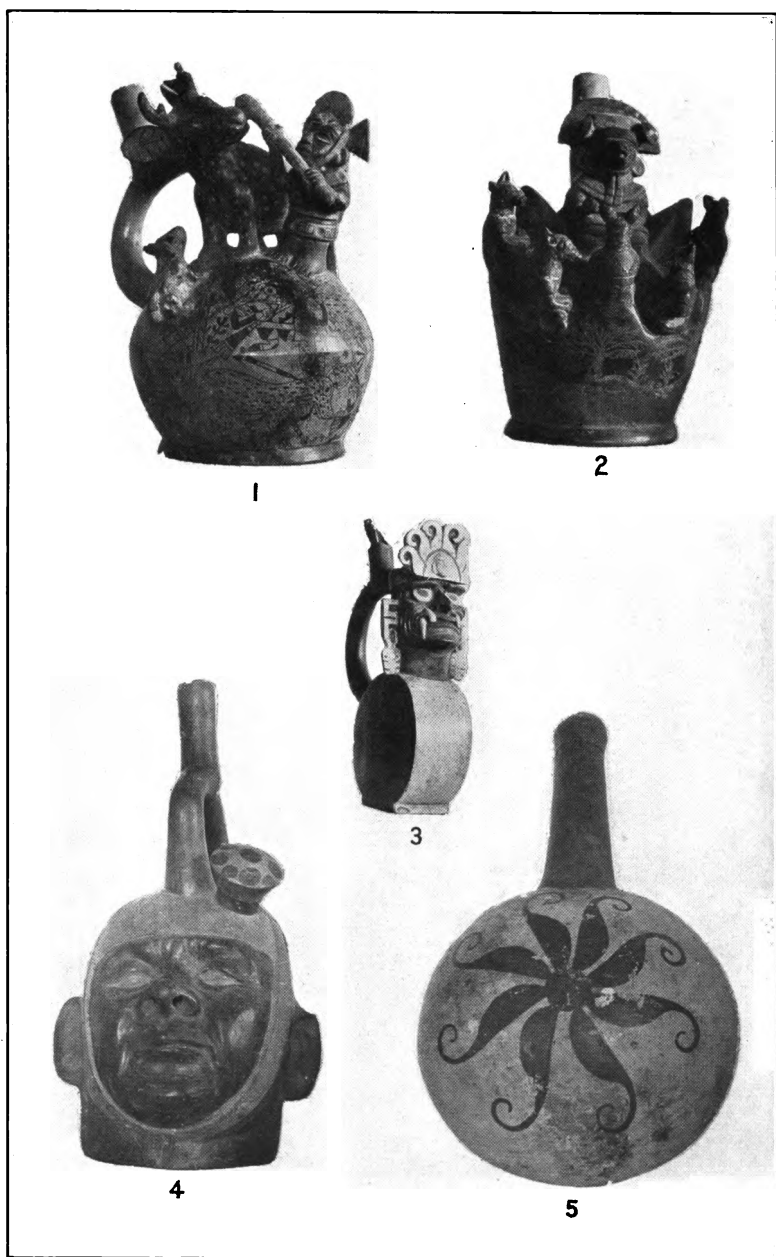
- Fig. 1. An Inca or Cuzco aryballus.
Yale Collection; courtesy of the Connecticut Academy
of Arts and Sciences.
- Fig. 2. An Inca or Cuzco vessel.
Yale Collection; courtesy of the Connecticut Academy
of Arts and Sciences.
- Fig. 3. A vessel with anthropomorphic decorations. Although
the specimen was found at Machu Picchu, it may have
been carried there from the coast. It is of the Chimu
type, not of the Inca or Cuzco type.
Yale Collection; courtesy of the Connecticut Academy
of Arts and Sciences.
- Fig. 4. A vessel combining Chimu art with Inca or Cuzco art.
Compare with Figure 3.
Yale Collection; courtesy of the Connecticut Academy
of Arts and Sciences.

PLATE XVI.

Two Inca or Cuzco type ponchos. Very rich in color,
and beautifully woven.
Courtesy of the American Museum of Natural History,
New York City.

PLATE XVII.

Two Inca or Cuzco type textiles:
Courtesy of the American Museum of Natural History,
New York City.



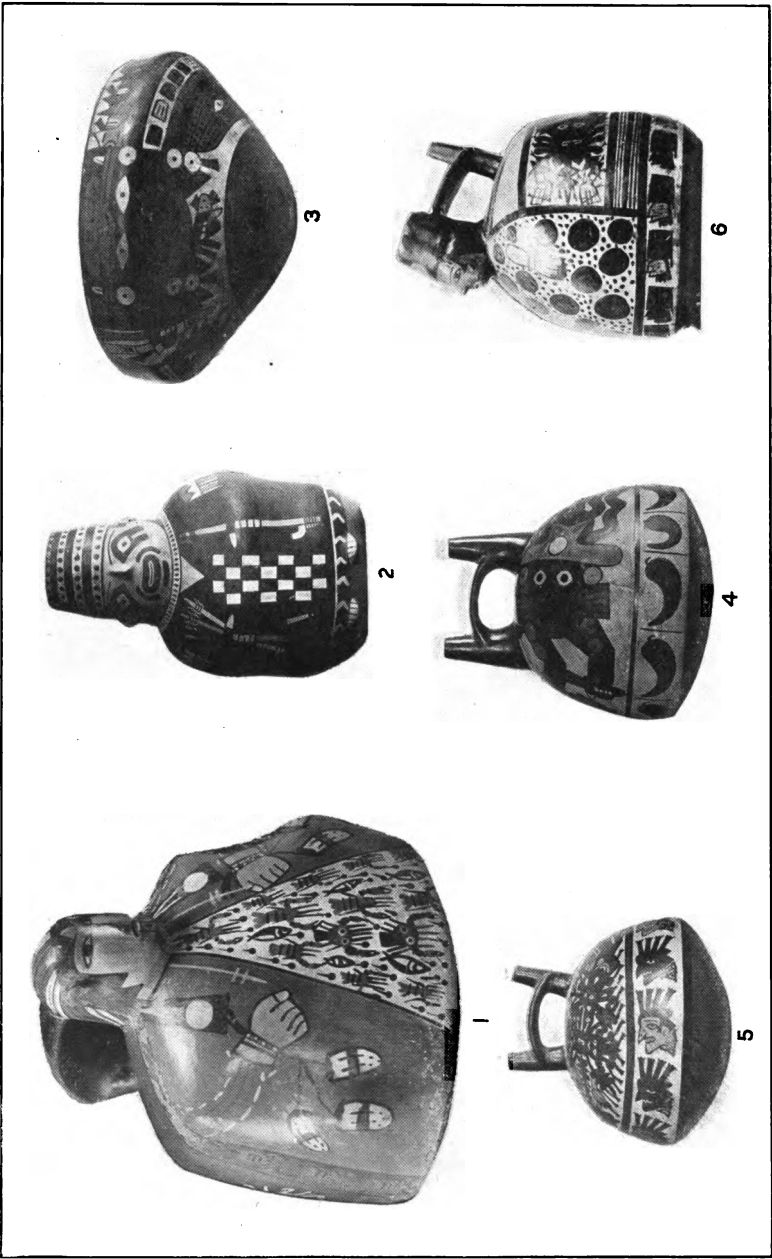
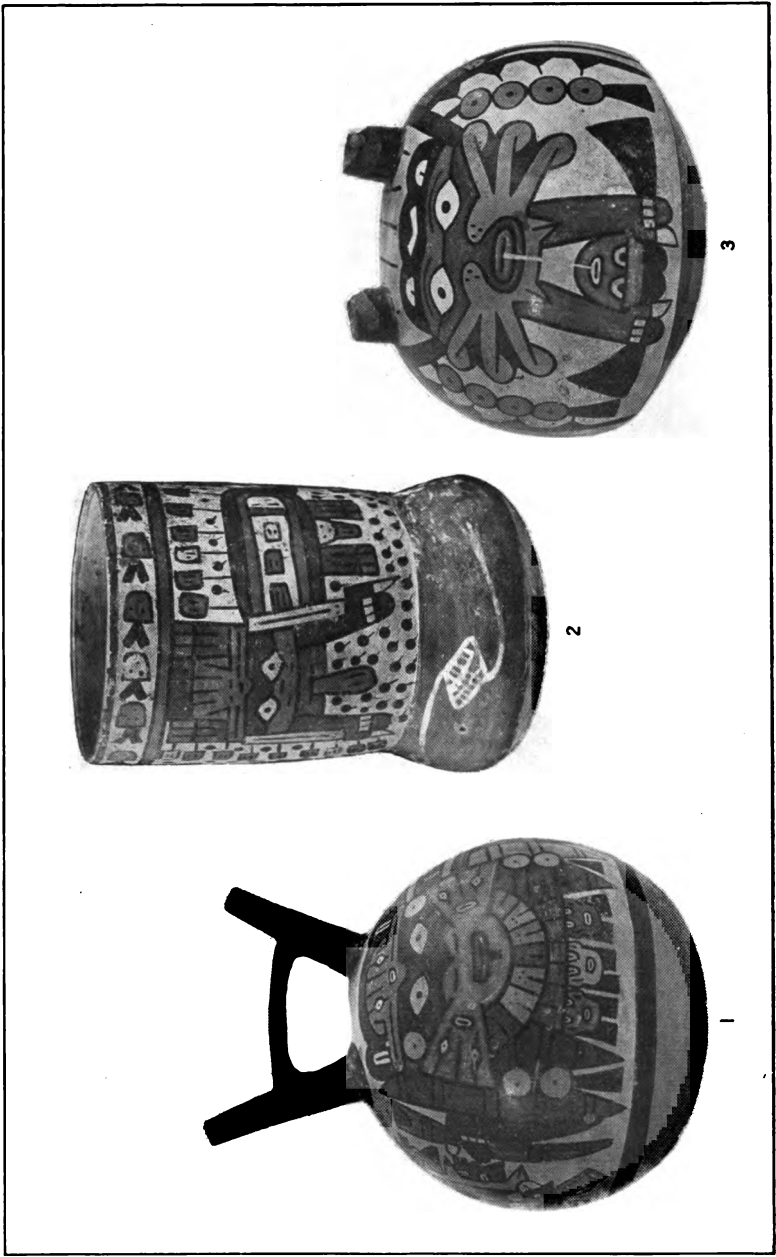


Fig. 1
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Fig. 6



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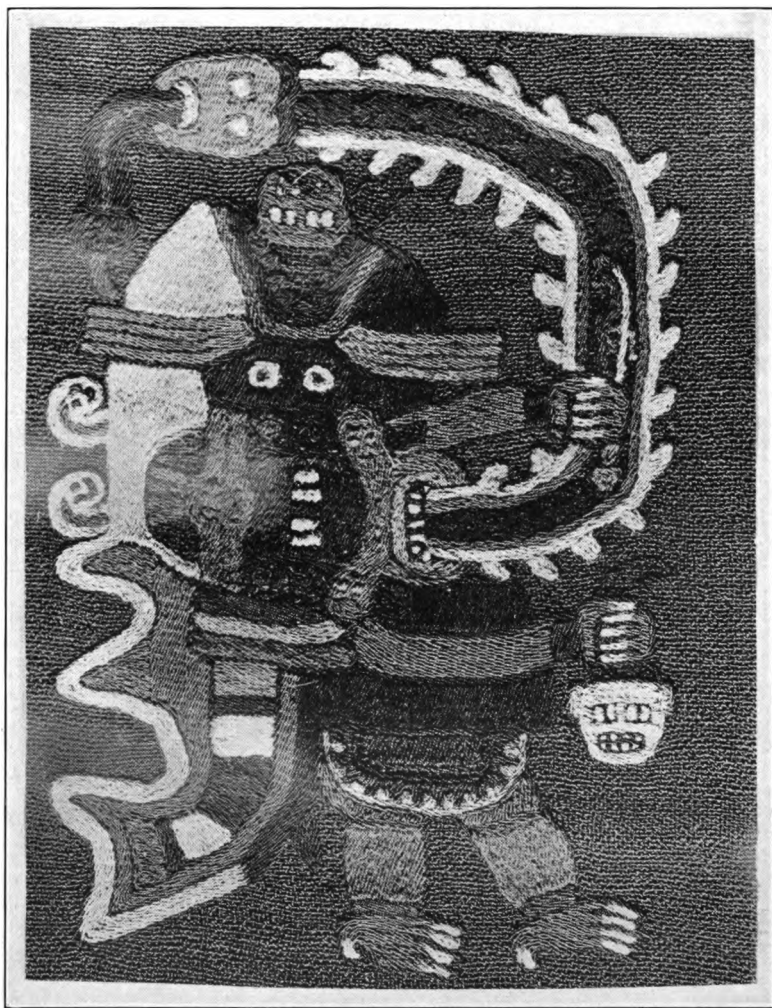
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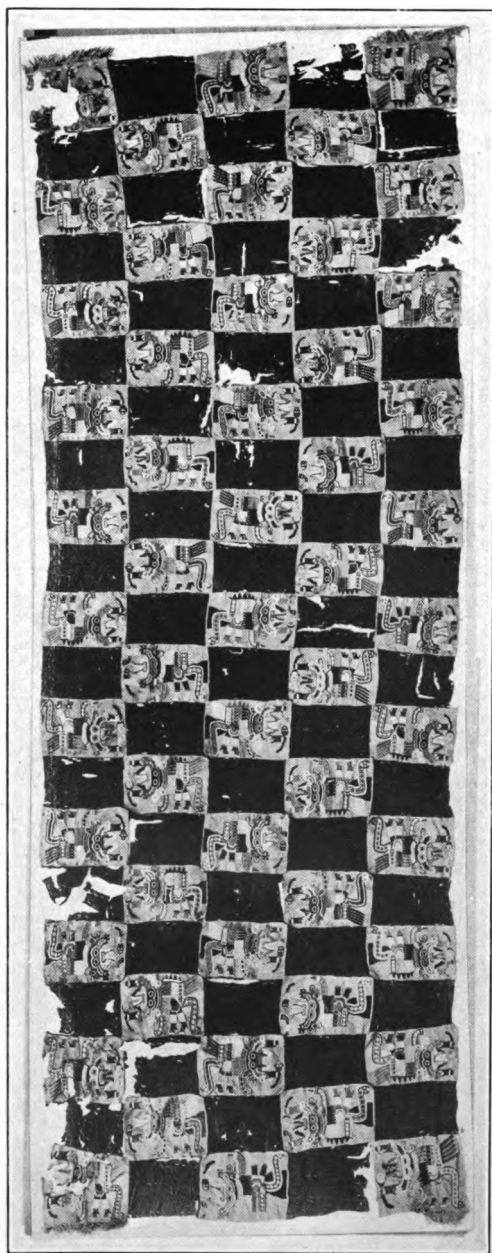


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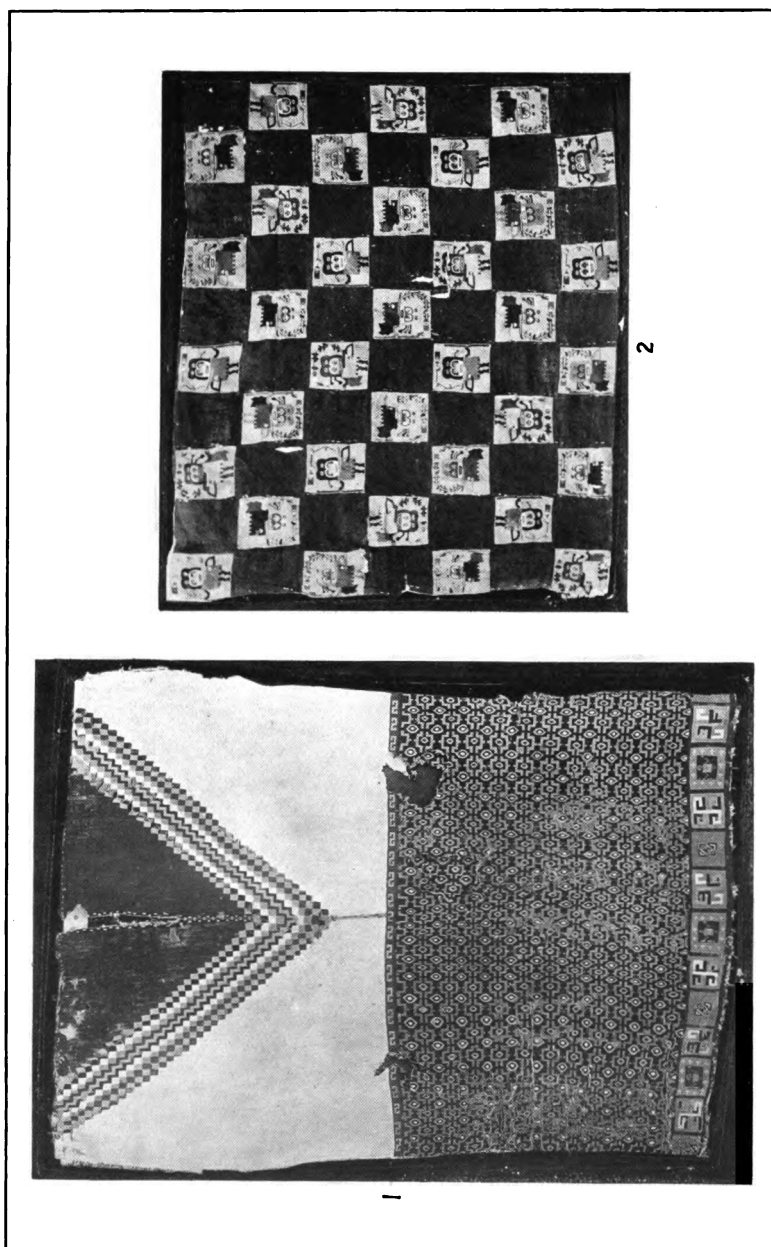


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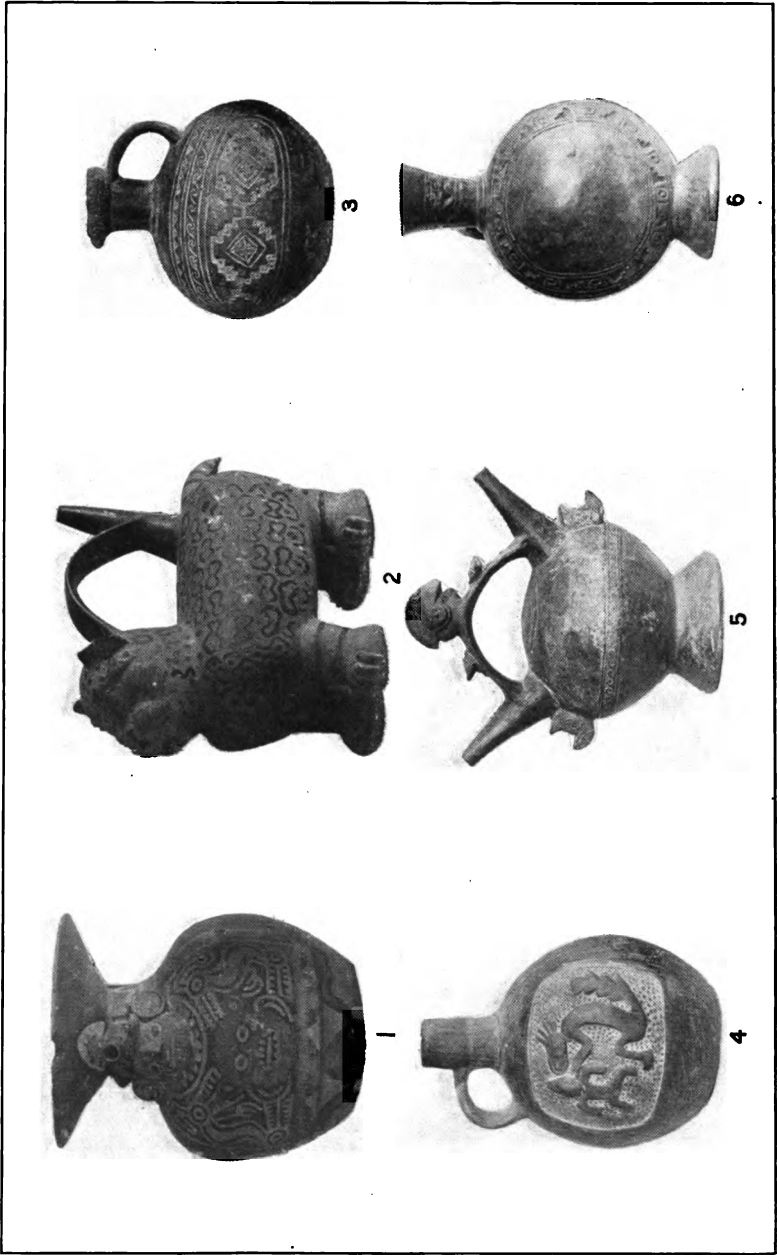


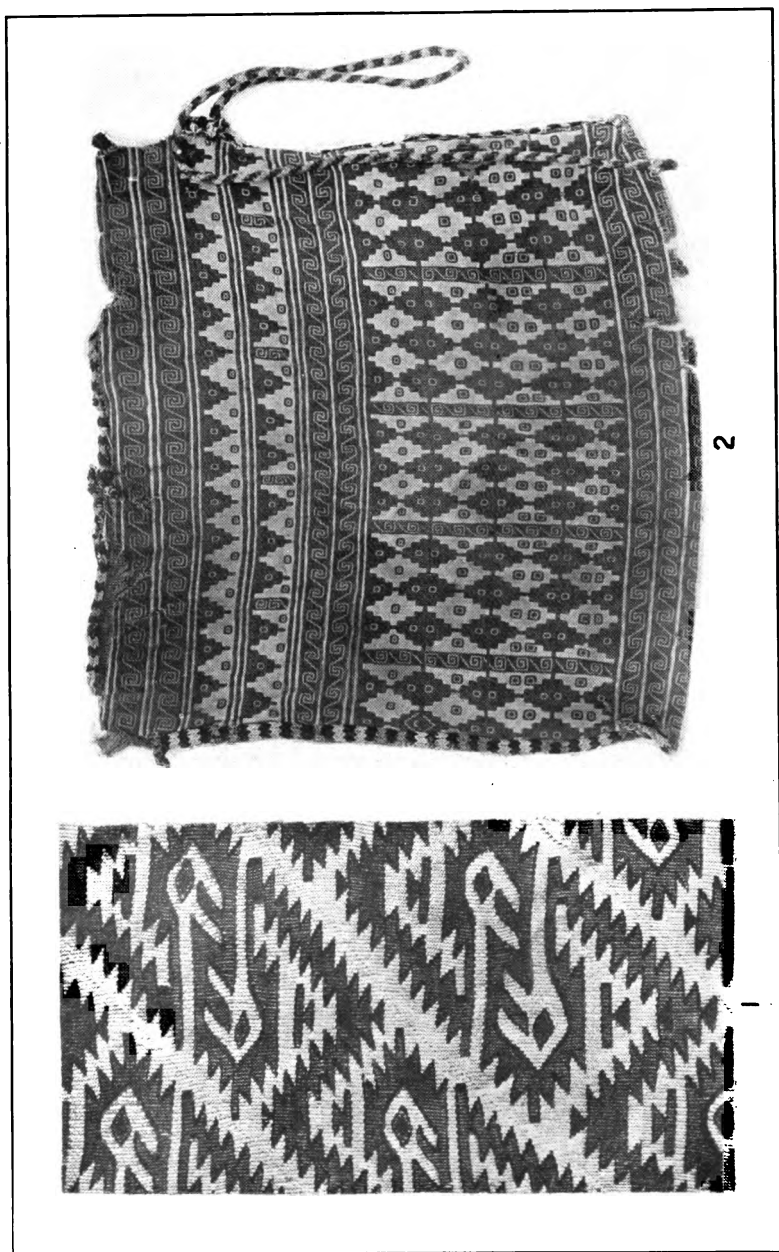


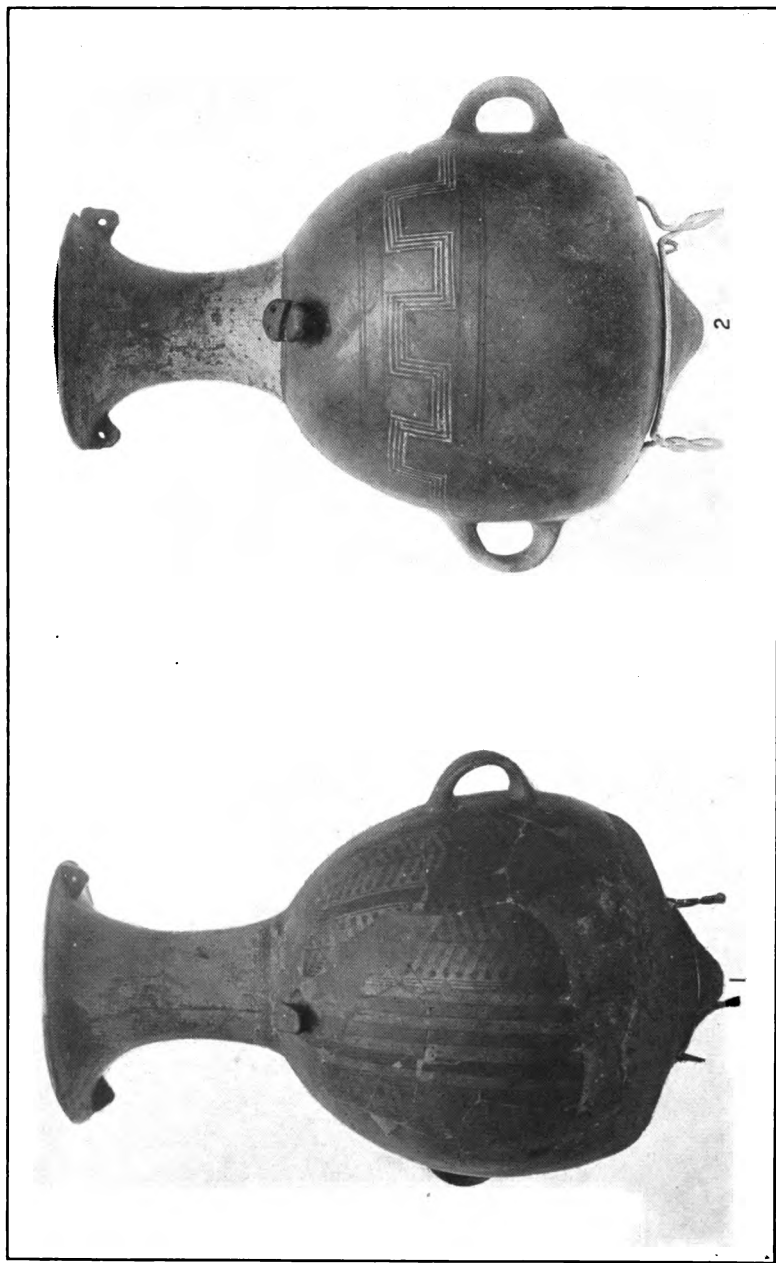




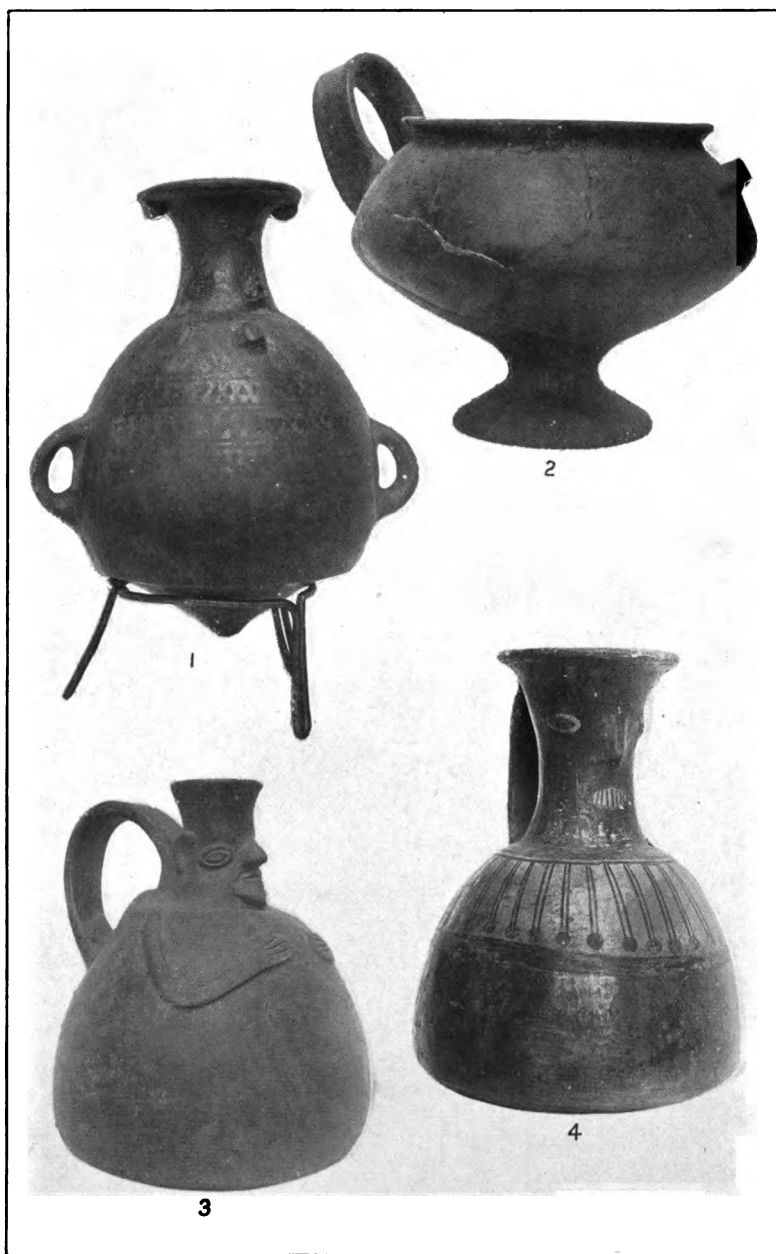




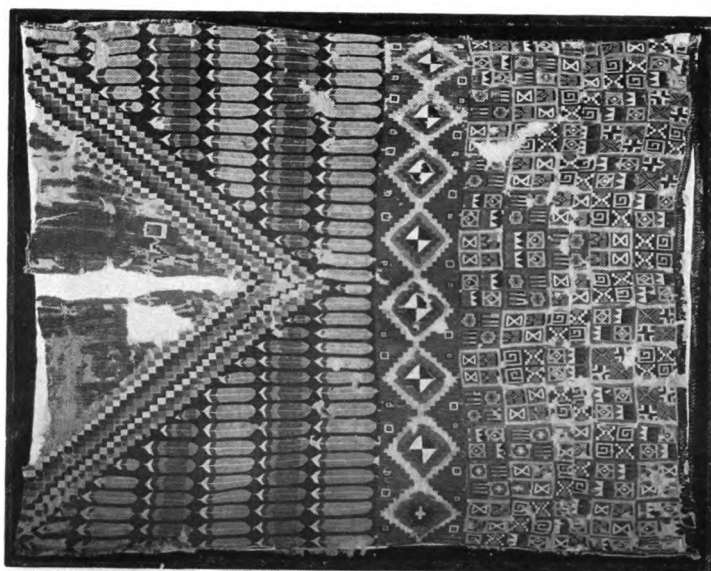
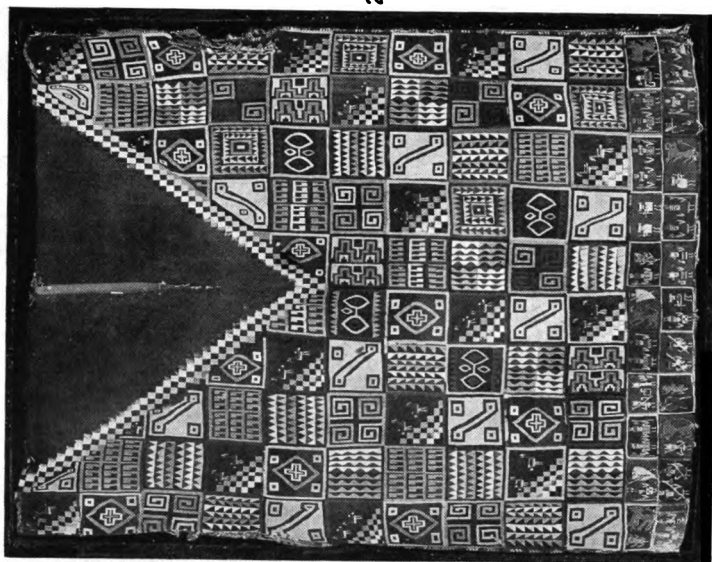


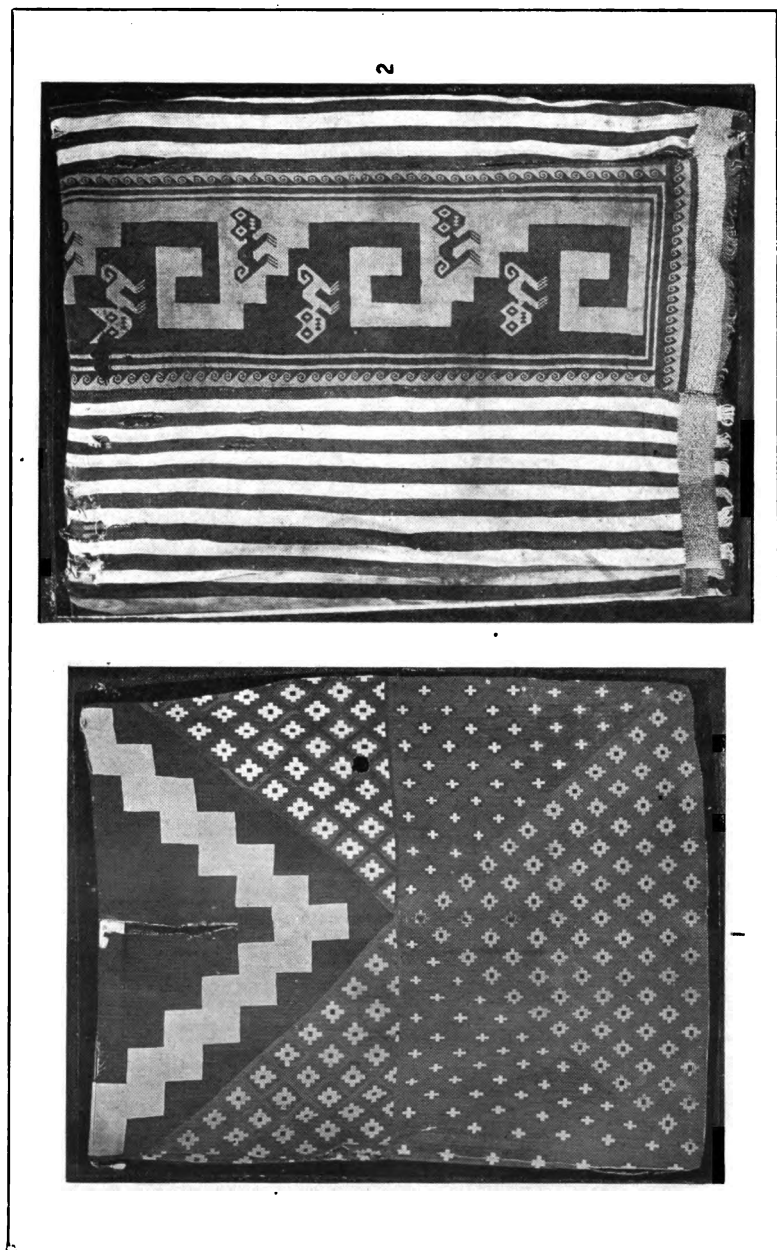






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